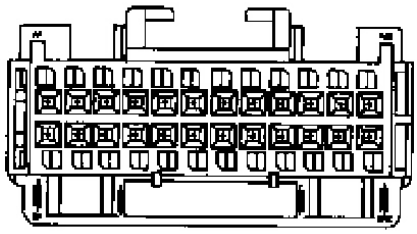
AIR BAG RESTRAINT SYSTEM

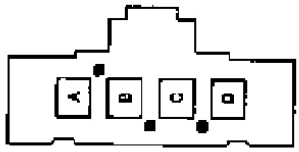
1997 ACCESSORIES/SAFETY EQUIPMENT General Motors - Air Bag Restraint System

CONNECTOR IDENTIFICATION

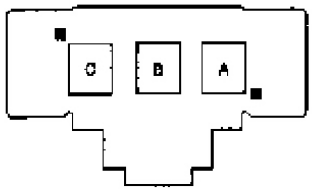
NOTE: To identify SIR wiring connector terminals, see Fig. 1 .



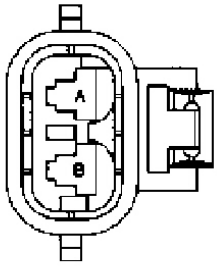
DERM



Arming Sensor



Left Front Discriminating Sensor



Right Front Discriminating Sensor

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Courtesy of General Motors Corp.

Fig. 1: Connector Terminal Identification
Courtesy of GENERAL MOTORS CORP.

DIAGNOSIS & TESTING

WARNING: Failure to follow service precautions may result in air bag deployment and personal injury. See SERVICE PRECAUTIONS . After component replacement, check system operation. See SYSTEM OPERATION CHECK .

SELF-DIAGNOSIS

Diagnostic Trouble Codes (DTCs)

Diagnostic Energy Reserve Module (DERM) provides a record of DTCs stored according to type. Current DTCs are faults presently being detected. Current DTCs are stored in Random Access Memory (RAM) and are erased when fault is corrected. Current DTCs can be read using a scan tester such as Tech 1.

Scan Tester Diagnostics

A scan tester will read and clear current codes and history codes. Ensure scan tester contains correct cartridge for SIR diagnostics. To use scan tester, connect it to DLC connector, plug in power source and turn ignition switch to ON position. Follow scan tester manufacturer instructions for communication with SIR system. Scan tester reads serial data from DERM data link output to DLC connector.

NOTE: Failure to follow diagnostic procedures may result in extended diagnostic time and incorrect diagnosis and parts replacement.

Diagnostic Procedure

1. SIR SYSTEM DIAGNOSTIC CHECK should always be starting point of SIR diagnostics. See **SIR DIAGNOSTIC SYSTEM CHECK** under DIAGNOSTIC TABLES. SIR DIAGNOSTIC SYSTEM CHECK checks for proper INFLATABLE RESTRAINT indicator light operation and SIR trouble codes using flash code and scan tester methods.
2. SIR DIAGNOSTIC SYSTEM CHECK will lead to correct diagnostic table to diagnose SIR problems. Always perform SIR DIAGNOSTIC SYSTEM CHECK after repair or diagnostic procedures to ensure repair is correct and no other problems are present.

DIAGNOSTIC TABLES

SIR DIAGNOSTIC SYSTEM CHECK

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is turned ON, IGNITION 1 voltage is applied from AIR BAG fuse to DERM at IGNITION 1 input terminal Nos. A9 and A10 and from GAUGES fuse to DERM at REDUNDANT INDICATOR IGNITION 1 input terminal No. B2. DERM responds by flashing AIR BAG indicator 7 times then turning off while performing tests on SIR system.

When engine is being cranked, system voltage is applied from CRANK fuse to DERM at CRANK input terminal No. B10. DERM responds by grounding SIR Indicator output terminal No. B1 until system voltage is

removed from CRANK input. This results in AIR BAG indicator being on steady during cranking. After cranking, DERM will flash AIR BAG indicator 6 times and perform test on SIR system.

Diagnostic Aids

The order in which diagnostic trouble codes are diagnosed is important. Failure to diagnose the DTCs in order specified may result in extended diagnostic time, incorrect diagnosis, or incorrect parts replacement.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1. AIR BAG indicator should flash 7 times after ignition switch is turned to ON.
2. AIR BAG indicator should remain on steady during cranking.
3. After cranking, AIR BAG indicator should flash 6 times then turn off.
4. This test checks for proper operation of Serial Data line. Test also will determine whether history diagnostic trouble codes are stored and, if so, identify them.
5. This test checks for DERM ability to communicate through the Serial Data line.
6. This test refers to appropriate DTC table for diagnosis of history DTCs set to memory in DERM.
7. When AIR BAG warning light flashes four times during BULB TEST, this indicates a malfunction in redundant lamp driver circuitry. These malfunctions are diagnosed by DTC B1062 table.
8. Improper operation of AIR BAG indicator is indicated. This test differentiates an indicator stays ON condition from an indicator does not come ON condition.

SIR DIAGNOSTIC SYSTEM CHECK

Step	Action	Yes	No
1	1. Note the "AIR BAG" warning lamp as the ignition switch is turned "ON". 2. Does the "AIR BAG" warning lamp flash seven times?	Go to Step 2	Go to Step 7
2	1. Note the "AIR BAG" warning lamp as the engine is started. 2. Does the "AIR BAG" warning lamp come "ON" steady during cranking?	Go to Step 3	Go to Table D
3	1. Note the "AIR BAG" warning lamp after starting. 2. Does the "AIR BAG" warning lamp flash six times, then go "OFF"?	Go to Step 4	Go to Step 9
4	1. Connect a scan tool to the Data Link Connector and follow directions given in the scan tool instruction manual. 2. Request the SIR Diagnostic Trouble Code display. 3. Is a (are) history Diagnostic Trouble Code(s) displayed?	Go to Step 6	Go to Step 5
5	1. Does the scan tool indicate no data received?	Diagnose Electrical System	System OK
6	1. Record all the displayed Diagnostic Trouble Codes on the repair order specifying as history. 2. Ignition switch "OFF." 3. Refer to "Diagnostic Aids" for the indicated diagnostic trouble code. A history Diagnostic Trouble Code indicates the malfunction has been repaired (but DTCs were not cleared) or is intermittent. 4. Has the diagnosis been performed and DTCs cleared?	Go to Step 1	—
7	1. Does the "AIR BAG" warning lamp flash four times?	Go to DTC 62	Go to Step 8
8	1. Does the "AIR BAG" warning lamp come "ON" steady?	Go to Table B	Go to Table C
9	1. Connect a scan tool to the Data Link Connector and follow directions given in the scan tool instruction manual. 2. Request the SIR Diagnostic Trouble Code display. 3. Is a (are) current Diagnostic Trouble Code(s) displayed?	Go to Step 10	Go to Step 5
10	1. Record all the displayed Diagnostic Trouble Codes on the repair order specifying as current or history. 2. When DTC 51 is set, diagnose as directed by DTC 51 table. 3. Diagnose all the remaining current Diagnostic Trouble Codes from lowest to highest. 4. Has Current DTC diagnosis been performed and all current DTC(s) cleared?	Go to Step 11	—
11	1. Is a (are) history Diagnostic Trouble Code(s) recorded on the repair order?	Go to Step 6	

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Fig. 2: SIR Diagnostic System Check
Courtesy of GENERAL MOTORS CORP.

TABLE A - DERM INTEGRITY CHECK

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When DERM recognizes IGNITION 1 voltage applied to terminal Nos. A9 and A10 is in normal operating voltage range, AIR BAG indicator is flashed 7 times to verify operation. At this time DERM performs Turn ON tests followed by CONTINUOUS MONITORING tests. When no malfunctions are detected, DERM proceeds to INITIATOR ASSEMBLY RESISTANCE test. When a malfunction is detected, DERM sets a current diagnostic trouble code and turns AIR BAG indicator on. DERM will clear current diagnostic trouble codes and move them to a history file when malfunction is not longer detected and/or ignition switch is cycled, except for DTC B1051. DTC B1051 can only be cleared using a scan tool clear codes command.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1. The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2. This test confirms a current malfunction. If no current malfunction is occurring (History DTC set) Diagnostic Aids for appropriate diagnostic trouble code should be referenced. DERM should not be replaced for a History DTC, except when directed by appropriate diagnostic table.
3. This test checks for a malfunction introduced into SIR system during diagnostic process. It is extremely unlikely that a malfunctioning DERM would cause a new malfunction to occur during diagnostic process.
4. When all circuitry outside DERM has been found to operate properly, as indicated by appropriate diagnostic table, then and only then should DERM be replaced.
5. The symptom or DTC is no longer occurring. The condition may be intermittent or inadvertently repaired during diagnosis of SIR system.

TABLE A - DERM INTEGRITY CHECK

THIS TABLE ASSUMES THAT THE "SIR DIAGNOSTIC SYSTEM CHECK" AND EITHER A SYMPTOM TABLE OR A DIAGNOSTIC TROUBLE CODE TABLE DIAGNOSIS HAVE BEEN PERFORMED. WHEN ALL CIRCUITRY OUTSIDE THE DERM HAS BEEN FOUND TO OPERATE PROPERLY, AS INDICATED BY THE APPROPRIATE DIAGNOSTIC TABLE, AND THE SYMPTOM OR DTC REMAINS CURRENT, THE FOLLOWING DIAGNOSTIC PROCEDURES MUST BE PERFORMED TO VERIFY THE NEED FOR DERM REPLACEMENT.

Step	Action	Yes	No
1	1. Were you sent here from a Symptom Table or a Diagnostic Trouble Code Table?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Reconnect all the SIR system components. 3. Ensure the ignition switch has been "OFF" for at least two minutes. 4. Note the "AIR BAG" warning lamp as ignition switch is turned "ON." 5. Does the "AIR BAG" warning lamp flash seven times and go "OFF"?	Go to Step 5	Go to Step 3
3	1. Using a scan tool, request the Diagnostic Trouble Code display. 2. Is the same symptom or DTC occurring as was when the "SIR Diagnostic Check" was first performed?	Go to Step 4	Go to indicated table
4	1. Clear the SIR Diagnostic Trouble Codes. 2. Turn the ignition switch "OFF" for at least two minutes. 3. Note the "AIR BAG" warning lamp as the ignition switch is turned "ON." 4. Does the "AIR BAG" warning lamp flash seven times and then go "OFF"?	System OK	Go to Step 6
5	1. The symptom or DTC is no longer occurring. 2. Clear the SIR Diagnostic Trouble Codes. 3. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—
6	1. Ignition switch "OFF".. 2. Replace the DERM. Refer to ON-VEHICLE SERVICE, DIAGNOSTIC ENERGY RESERVE MODULE (DERM). 3. Has the DERM been replaced?	Go to "SIR Diagnostic System Check"	—

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Fig. 3: Table A - DERM Integrity Check
Courtesy of GENERAL MOTORS CORP.

TABLE B - AIR BAG INDICATOR COMES ON STEADY

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is first turned ON, IGNITION 1 voltage is applied from GAUGES fuse to REDUNDANT INDICATOR IGNITION 1 terminal No. B2 and to AIR BAG indicator which is connected to SIR INDICATOR terminal No. B1. AIR BAG fuse applies voltage to IGNITION 1 terminal Nos. A9 and A10. DERM responds by flashing AIR BAG indicator 7 times. If IGNITION 1 voltage is outside of normal operating voltage range, AIR BAG indicator will come on steady with no DTCs set.

When engine is cranked, IGNITION 1 voltage is applied from CRANK fuse to DERM at CRANK input. DERM responds by grounding SIR INDICATOR output until IGNITION 1 voltage is removed from CRANK input. This results in AIR BAG indicator being on during cranking. After cranking, DERM will flash AIR BAG indicator 6 times.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) An open AIR BAG fuse would cause AIR BAG indicator to come on steady.

3) A disconnected DERM harness connector will cause AIR BAG indicator to come on steady via shorting bar from terminal No. A1 to terminal No. B1.

9) This test checks for an open in ground circuit to DERM.

11) This test checks for an open in CKT 1139.

16) This test checks for short from CRANK input circuit to B+.

17) This test isolates the short to B+ in CKT 806/1035 to one side of connector C203.

TABLE B - AIR BAG WARNING LIGHT COMES ON STEADY (1 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Remove and inspect the "AIR BAG" fuse. 3. Is the fuse good?	Go to Step 3	Go to Step 20
3	1. Inspect the DERM electrical harness connector connection to the DERM. 2. Is the connector securely connected to the DERM?	Go to Step 4	Go to Step 24
4	1. Disconnect the DERM. 2. Check for proper connection to the DERM at terminals "A1," "A9," "A10" and "A12." 3. Is the DERM harness connector damaged or corroded?	Go to Step 6	Go to Step 7
5	1. Check for proper connection to the DERM at terminals "A1," "A9," "A10" and "A12." 2. Are the DERM terminals damaged or corroded?	Go to Step 8	Go to Step 30
6	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
7	1. Check for proper connection to the DERM at terminals "A1," "A9," "A10" and "A12." 2. Are the DERM terminals damaged or corroded?	Go to Step 8	Go to Step 9

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Fig. 4: Table B - Air Bag Indicator Comes On Steady (1 Of 3)

Courtesy of GENERAL MOTORS CORP.

TABLE B - AIR BAG WARNING LIGHT COMES ON STEADY (2 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
8	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 30	—
9	1. Measure resistance from DERM harness connector terminal "A1" to ground. 2. Is either measurement 5.0 ohms or less?	Go to Step 11	Go to Step 10
10	1. Repair open in CKT 1751. 2. Has open in CKT 1751 been repaired?	Go to Step 30	—
11	1. Measure resistance from each terminal of the "AIR BAG" fuse holder to the DERM electrical harness connector terminal "A9 " and "A10" 2. Is either measurement 5.0 ohms or less?	Go to Step 12	Go to Step 25
12	1. Install the "AIR BAG" fuse. 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Connect the DERM harness connector to J 38715-A SIR Driver/Passenger Load Tool. 4. Ignition switch "ON." 5. Does the "AIR BAG" warning lamp come "ON"?	Go to Step 13	Go to Step 16
13	1. Ignition switch "OFF." 2. Disconnect electrical connector (C203, terminal D7). 3. Ignition switch "ON." 4. Does the "AIR BAG" warning lamp come "ON"?	Go to Step 15	Go to Step 14
14	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Repair the short to ground CKT 358 between C203 and DERM. 4. Has the short CKT been repaired?	Go to Step 30	—
15	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Repair the short to ground CKT 358 between C203 and I/P Cluster. 4. Has the short CKT been repaired?	Go to Step 30	—
16	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Ignition switch "ON." 4. Measure the voltage on the DERM electrical harness connector from terminal "B10" to terminal "A1" (ground). 5. Is the voltage 1 volt or less?	Go to Table A	Go to Step 17
17	1. Ignition switch "OFF." 2. Disconnect electrical connector (C203, terminal A8). 3. Ignition switch "ON." 4. Measure the voltage on the DERM electrical harness connector from terminal "B10" to terminal "A1" (ground). 5. Is the voltage 1 volt or less?	Go to Step 18	Go to Step 19
18	1. Ignition switch "OFF." 2. Repair the short B+ in CKT 806/1035 between C203 and Crank fuse. 3. Has the short CKT been repaired?	Go to Step 30	—

97J05610 Courtesy of General Motors Corp.

Fig. 5: Table B - Air Bag Indicator Comes On Steady (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

TABLE B - AIR BAG WARNING LIGHT COMES ON STEADY (3 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
19	1. Ignition switch "OFF." 2. Repair the short B+ in circuit 806/1035 between terminal A8 and B10. 3. Has the short CKT been repaired?	Go to Step 30	—
20	1. Replace the "AIR BAG" fuse. 2. Ignition switch "ON." 3. Wait 10 seconds. 4. Ignition switch "OFF." 5. Remove and inspect the "AIR BAG" fuse. 6. Is the fuse good?	Go to Step 30	Go to Step 21
21	1. Disconnect the arming sensor. 2. Replace the "AIR BAG" fuse. 3. Ignition switch "ON." 4. Wait 10 seconds. 5. Ignition switch "OFF." 6. Remove and inspect the "AIR BAG" fuse. 7. Is the fuse good?	Go to Step 22	Go to Step 23
22	1. Replace the Arming Sensor. 2. Has the sensor been replaced?	Go to Step 30	—
23	1. Repair the short to ground in CKT 1139. 2. Has the short CKT been repaired?	Go to Step 30	—
24	1. Properly connect the DERM electrical harness connector to the DERM. 2. Has the connector been properly connected to the DERM?	Go to Step 30	—
25	1. Disconnect electrical connector (C200) terminal "S." 2. Check for proper connection at terminal "S." 3. Is the connector damaged or corroded?	Go to Step 26	Go to Step 27
26	1. Repair electrical connector (C200) terminal "S." 2. Has the connector been repaired?	Go to Step 30	—
27	1. Ignition switch "ON." 2. Measure the voltage on the fuse side of connector (C200) at terminal "S." 3. Does J 39200 display battery voltage?	Go to Step 28	Go to Step 29
28	1. Repair the open in CKT 1139 between terminal "S", "A9" and "A10". 2. Has the open CKT been repaired?	Go to Step 30	—
29	1. Repair the open in CKT 1139 between terminal "S" and AIR BAG fuse. 2. Has the open CKT been repaired?	Go to Step 30	—
30	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 31	—
31	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 6: Table B - Air Bag Indicator Comes On Steady (3 Of 3)

Courtesy of GENERAL MOTORS CORP.

TABLE C - AIR BAG INDICATOR DOES NOT COME ON

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is first turned ON, IGNITION 1 voltage is applied from GAUGES fuse to REDUNDANT INDICATOR IGNITION 1, terminal No. B2 and to AIR BAG indicator which is connected to SIR INDICATOR terminal No. B1. AIR BAG fuse applies system voltage to IGNITION 1 inputs, terminal Nos. A9 and A10. DERM responds by flashing AIR BAG indicator 7 times.

When engine is being cranked, Ignition 1 voltage is applied from CRANK fuse to DERM at CRANK input. DERM responds by grounding SIR INDICATOR output until IGNITION 1 voltage is removed from CRANK input. This results in AIR BAG indicator being on during cranking. After cranking, DERM will flash AIR BAG indicator 6 times.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) This test determines whether malfunction is in DERM circuit or in instrument cluster power feed circuit.

8) This test checks for open in SIR INDICATOR circuit, instrument cluster circuit and AIR BAG indicator circuit.

9) This test determines if malfunction is a short from SIR INDICATOR circuit to B+.

16) This test checks if open is due to bad bulb.

18) This test determines if malfunction is an open in SIR INDICATOR circuit or an open in instrument cluster.

22) This test determines where open in CKT 358 is located.

26) This test determines if blown fuse was result of fatigue or a circuit short.

28) This test determines if short to ground is due to a short in wiring or a malfunctioning DERM.

34) This test checks whether malfunction is due to an open power feed circuit from GAUGES fuse to instrument cluster or an open power feed to GAUGES fuse.

TABLE C - AIR BAG WARNING LIGHT DOES NOT COME ON (1 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Apply the parking brake. 2. Ignition switch "ON." 3. Does the "BRAKE" warning lamp come "ON"?	Go to Step 3	Go to Step 25
3	1. Ignition switch to "OFF." 2. Disconnect the DERM. 3. Check for proper connection to the DERM at terminal "B1." 4. Is the DERM electrical harness connector damaged or corroded?	Go to Step 4	Go to Step 6
4	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
5	1. Check for proper connection to the DERM at terminal "B1." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 37
6	1. Check for proper connection to the DERM at terminal "B1." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 8

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Fig. 7: Table C - Air Bag Indicator Does Not Come On (1 Of 4)
Courtesy of GENERAL MOTORS CORP.

TABLE C - AIR BAG WARNING LIGHT DOES NOT COME ON (2 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
7	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 37	—
8	1. Measure the resistance on the DERM electrical harness connector from terminal "B2" to terminal "B1." 2. Is the resistance 5.0 ohms to 25 ohms?	Go to Step 9	Go to Step 12
9	1. Disconnect the instrument cluster. 2. Connect the DERM electrical harness connector to J 38715-A SIR Driver/Passenger Load Tool DERM connector. 3. Ignition switch "ON." 4. Measure the voltage from instrument cluster electrical harness connector terminal "6" to ground. 5. Is the voltage 1 volt or less?	Go to Step 10	Go to Step 11
10	1. Install the instrument cluster. 2. Has the instrument cluster been installed?	Go to Table A	—
11	1. Repair the short from CKT to 358 to B+. 2. Has the short CKT been repaired?	Go to Step 37	—
12	1. Remove the instrument cluster. 2. Check for proper connection to the instrument cluster at terminal "6." 3. Is the instrument cluster electrical harness connector damaged or corroded?	Go to Step 13	Go to Step 14
13	1. Repair the instrument cluster harness electrical connector. 2. Has the connector been repaired?	Go to Step 14	—
14	1. Check for proper connection to the instrument cluster at terminal "6." 2. Are the instrument cluster terminals damaged or corroded?	Go to Step 15	Go to Step 16
15	1. Service or replace instrument cluster as needed. 2. Install the instrument cluster. 3. Has the instrument cluster been installed?	Go to Step 37	—
16	1. Remove and inspect the "AIR BAG" bulb. 2. Is the bulb good?	Go to Step 18	Go to Step 17
17	1. Replace the "AIR BAG" bulb. 2. Install the instrument cluster. 3. Has the instrument cluster been installed?	Go to Step 37	—
18	1. Install the "AIR BAG" bulb. 2. Measure the resistance from the instrument cluster electrical harness connector terminal "6" to the DERM electrical harness connector terminal "B1." 3. Is the resistance 5.0 ohms or less?	Go to Step 19	Go to Step 20
19	1. Service the instrument cluster. 2. Install the instrument cluster. 3. Has the instrument cluster been installed?	Go to Step 37	—
20	1. Disconnect electrical connector (C203, terminal D7). 2. Check for proper connection at terminal "D7." 3. Is the connector damaged or corroded?	Go to Step 21	Go to Step 22

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Courtesy of General Motors Corp.

Fig. 8: Table C - Air Bag Indicator Does Not Come On (2 Of 4)

Courtesy of GENERAL MOTORS CORP.

TABLE C - AIR BAG WARNING LIGHT DOES NOT COME ON (3 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
21	1. Repair electrical connector (C203, terminal D7). 2. Has the electrical connector been repaired?	Go to Step 37	—
22	1. Measure the resistance of CKT 358 from electrical connector C203 terminal "D7" to the DERM electrical harness connector terminal "B1." 2. Is the resistance 5.0 ohms or less?	Go to Step 23	Go to Step 24
23	1. Repair the open in CKT 358 from C203 to I/P. 2. Has the open CKT been repaired?	Go to Step 37	—
24	1. Repair the open in CKT 358 from C203 to DERM. 2. Has the open CKT been repaired?	Go to Step 37	—
25	1. Ignition switch "OFF." 2. Remove and inspect the "GAUGES" fuse. 3. Is the fuse good?	Go to Step 30	Go to Step 26
26	1. Replace the "GAUGES" fuse. 2. Ignition switch "ON." 3. Wait ten seconds. 4. Ignition switch "OFF." 5. Remove and inspect the "GAUGES" fuse. 6. Is the fuse good?	Go to Step 27	Go to Step 28
27	1. Install the "GAUGES" fuse. 2. Has the fuse been installed?	Go to Step 37	—
28	1. Disconnect the yellow 2-way electrical connector at the base of the steering column. 2. Disconnect the DERM. 3. Replace the "GAUGES" fuse. 4. Ignition switch "OFF." 5. Wait 10 seconds. 6. Ignition switch "OFF." 7. Remove and inspect the "GAUGES" fuse. 8. Is the fuse good?	Go to Table A	Go to Step 29
29	1. Repair the short to ground in CKT 39 or the instrument cluster. 2. Has the short been repaired?	Go to Step 37	—
30	1. Disconnect the instrument cluster. 2. Check for proper connection to the instrument cluster at terminal "28." 3. Is the instrument cluster electrical harness connector damaged or corroded?	Go to Step 31	Go to Step 32
31	1. Repair the instrument cluster electrical harness connector. 2. Has connector been repaired?	Go to Step 32	—
32	1. Check for proper connection to the instrument cluster at terminal "28." 2. Are the instrument cluster terminals damaged or corroded?	Go to Step 33	Go to Step 34
33	1. Service or replace the instrument cluster as needed. 2. Install the instrument cluster. 3. Has the instrument cluster been installed?	Go to Step 37	—

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Courtesy of General Motors Corp.

Fig. 9: Table C - Air Bag Indicator Does Not Come On (3 Of 4)
Courtesy of GENERAL MOTORS CORP.

TABLE C - AIR BAG WARNING LIGHT DOES NOT COME ON (4 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
34	1. Measure the resistance from instrument cluster electrical harness connector terminal "28" to each terminal of the "GAUGES" fuse holder. 2. Is either measurement 5.0 ohms or less?	Go to Step 36	Go to Step 35
35	1. Repair open in CKT 39 between the instrument cluster and the "GAUGES" fuse holder. 2. Has the open CKT been repaired?	Go to Step 37	—
36	1. Repair the open in power feed to the "GAUGES" fuse holder wire. 2. Has the open CKT been repaired?	Go to Step 37	—
37	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR system components been reconnected and properly mounted?	Go to Step 38	—
38	1. Clear all the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 10: Table C - Air Bag Indicator Does Not Come On (4 Of 4)
Courtesy of GENERAL MOTORS CORP.

TABLE D -AIR BAG INDICATOR DOES NOT COME ON STEADY DURING CRANK

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is first turned ON, IGNITION 1 voltage is applied from GAUGES fuse to REDUNDANT INDICATOR IGNITION 1, terminal No. B2 and to AIR BAG indicator which is connected to SIR INDICATOR terminal No. B1. AIR BAG fuse applies system voltage to IGNITION 1 inputs, terminal Nos. A9 and A10. DERM responds by flashing AIR BAG indicator 7 times.

When engine is being cranked, Ignition 1 voltage is applied from CRANK fuse to DERM at CRANK input. DERM responds by grounding SIR INDICATOR output until IGNITION 1 voltage is removed from CRANK input. This results in AIR BAG indicator being on during cranking. After cranking, DERM will flash AIR BAG indicator 6 times.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) This test checks whether malfunction is due to an open CRANK fuse.

9) This test determines if lack of proper crank signal is due to an open CRANK input circuit or an open power feed to CRANK fuse.

13) This test determines where open in CKT 806/1035 is located.

16) This test checks whether CRANK fuse is open due to short to ground in CRANK input circuit.

17) This test checks whether short to ground is in wiring harness.

TABLE D - AIR BAG WARNING LIGHT DOES NOT COME ON STEADY DURING CRANK (1 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Remove and inspect the "CRANK" fuse. 3. Is the fuse good?	Go to Step 3	Go to Step 16
3	1. Install "CRANK" fuse. 2. Disconnect yellow 2-way connector located near the base of the steering column. 3. Disconnect the DERM. 4. Check for proper connection to the DERM at terminal "B10." 5. Is the DERM electrical harness connector damaged or corroded?	Go to Step 4	Go to Step 6
4	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
5	1. Check for proper connection to the DERM at terminal "B10." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 19
6	1. Check for proper connection to the DERM at terminal "B10." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 8
7	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 19	—

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Fig. 11: Table D - Air Bag Indicator Does Not Come On Steady During Crank (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

TABLE D - AIR BAG WARNING LIGHT DOES NOT COME ON STEADY DURING CRANK (2 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
8	1. Install the "CRANK" fuse. 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Measure the voltage on the DERM electrical harness connector from terminal "B10" to terminal "A1" (ground) while starting engine. 4. Is the voltage greater than 7.25 volts?	Go to Table A	Go to Step 9
9	1. Igntion switch "OFF." 2. Remove the "CRANK" fuse. 3. Measure the resistance from each terminal of the fuse holder to the DERM electrical harness connector terminal "B10." 4. Is either measurement 5.0 ohms or less?	Go to Step 10	Go to Step 11
10	1. Repair the open in the power feed to the "CRANK" fuse. 2. Has the power feed been repaired?	Go to Step 19	—
11	1. Disconnect electrical connector 2. Check terminal "A8" for proper connection. 3. Is the connector damaged or corroded?	Go to Step 12	Go to Step 13
12	1. Repair electrical connector 2. Has the connector been repaired?	Go to Step 19	—
13	1. Measure the resistance of CKT 806/1035 from DERM electrical harness connector terminal "B10" to electrical connector C203 terminal "A8." 2. Is the resistance 5.0 ohms or less?	Go to Step 14	Go to Step 15
14	1. Repair the open in CKT 806/1035 between connector C203 and "CRANK" fuse. 2. Has the open CKT been repaired?	Go to Step 19	—
15	1. Repair the open in CKT 806/1035 between DERM terminal B10 and connector C203. 2. Has the open CKT been repaired?	Go to Step 19	—
16	1. Replace the "CRANK" fuse. 2. Start the engine. 3. Ignition switch "OFF." 4. Remove and inspect the "CRANK" fuse. 5. Is the fuse good?	Go to Step 19	Go to Step 17
17	1. Disconnect the yellow 2-way electrical connector at the base of the steering column. 2. Disconnect the DERM. 3. Replace the "CRANK" fuse. 4. Start the engine. 5. Ignition switch "OFF." 6. Remove and inspect the "CRANK" fuse. 7. Is the fuse good?	Go to Table A	Go to Step 18
18	1. Repair the short from CKT 806/1035 to ground. 2. Has the short CKT been repaired?	Go to Step 19	—

97H05614 Courtesy of General Motors Corp.

Fig. 12: Table D - Air Bag Indicator Does Not Come On Steady During Crank (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

TABLE D - AIR BAG WARNING LIGHT DOES NOT COME ON STEADY DURING CRANK (3 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
19	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 20	—
20	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 13: Table D - Air Bag Indicator Does Not Come On Steady During Crank (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1014 - ARMING SENSOR DISCONNECTED

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

DERM monitors voltage at DRIVER SOURCE SENSE terminal No. A5, DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8 during CONTINUOUS MONITORING tests. When all voltages are simultaneously below a specified value for 500 milliseconds, DTC B1014 sets.

DTC Will Set

When voltages at terminal Nos. A5, B9 and B8 of DERM harness connector are simultaneously below a specified value for 500 milliseconds.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage at terminal Nos. A5, B9 and B8 of DERM harness connector is above a specified value for 500 milliseconds.

Diagnostic Aids

It is highly unlikely that an intermittent condition has set this diagnostic trouble code as this would require a poor connection at terminal Nos. A and B or terminal Nos. C and D.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1. The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2. This test checks for proper connection at arming sensor jumper harness electrical connector.
3. This test checks for proper connection of arming sensor to SIR wiring harness.

DTC B1014 - ARMING SENSOR DISCONNECTED

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the Arming Sensor jumper harness electrical connector C110 and reconnect. 4. Reconnect the yellow 2-way electrical connector at the base of the steering column. 5. Ignition switch "ON." 6. Is DTC B1014 current?	Go to Step 3	Go to Step 4
3	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the Arming Sensor electrical harness connector from the Arming Sensor and reconnect. 4. Reconnect the yellow 2-way electrical connector at the base of the steering column. 5. Ignition switch "ON." 6. Is DTC B1014 current?	Go to Table A	Go to Step 4
4	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Courtesy of General Motors Corp.

Fig. 14: DTC B1014 - Arming Sensor Disconnected
Courtesy of GENERAL MOTORS CORP.

DTC B1021 - DRIVER INITIATOR CIRCUIT RESISTANCE HIGH

WARNING: To avoid air bag deployment and injury when trouble shooting system,

only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During INITIATOR ASSEMBLY RESISTANCE test, DERM grounds DRIVER-SIDE LOW terminal No. B8 and turns on driver current source at DRIVER-SIDE HIGH terminal No. B9. This causes a known amount of current flow through driver initiator circuit. By monitoring difference between voltage at DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8, DERM calculates combined resistance of driver-side air bag module, SIR coil assembly, harness wiring CKTs 347 and 348 and connector terminal contact.

DTC Will Set

When the combined resistance of the driver-side air bag module, SIR coil assembly, harness wiring CKTs 347 and 348 and connector terminal contact is above a specified value. This test is run once each ignition cycle during INITIATOR ASSEMBLY RESISTANCE test when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING for 1 second.
3) No CRANK signal present.
4) IGNITION 1 voltage is above a specified value.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

An intermittent condition is likely to be caused by poor connection at **Yellow** 2-way connector at base of steering column, DERM terminal Nos. B8 or B9, or connection at top of steering column to driver-side air bag module. The test for this diagnostic trouble code is only run while AIR BAG indicator is performing BULB TEST. When scan tool CLEAR CODES command is issued and malfunction is still present, DTC will not reappear until next ignition cycle.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
7) This test checks for terminal deformation or contamination.
8) This test checks whether malfunction is in driver-side air bag module circuit or in DERM wiring harness circuit.

9) This test determines whether the malfunction is in driver-side air bag module or in SIR coil assembly.
16) This test checks for high resistance in DRIVER-SIDE LOW circuit.
18) This test checks for high resistance in DRIVER-SIDE HIGH circuit.

DTC B1021 - DRIVER INITIATOR CIRCUIT RESISTANCE HIGH (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Check for proper connection at terminals "A" and "B" on the harness side of the 2-way electrical connector. 4. Are the terminals damaged or corroded?	Go to Step 3	Go to Step 5
3	1. Repair the yellow 2-way electrical connector at the base of the steering column. 2. Has the connector been repaired?	Go to Step 4	—
4	1. Check for proper connection at terminals "A" and "B" on the SIR coil assembly side of the 2-way connector. 2. Are the terminals damaged or corroded?	Go to Step 6	Go to Step 20
5	1. Check for proper connection at terminals "A" and "B" on the SIR coil assembly side of the 2-way connector. 2. Are the terminals damaged or corroded?	Go to Step 6	Go to Step 7
6	1. Replace the SIR coil assembly. 2. Has the SIR coil assembly been replaced?	Go to Step 20	—
7	1. Reconnect the yellow 2-way electrical connector at the base of the steering column. 2. Ignition switch "ON." 3. Is DTC B1021 current?	Go to Step 8	Go to Step 3
8	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column and connect harness side to J 38715-A SIR Driver/Passenger Load Tool. 3. Ignition switch "ON." 4. Is DTC B1021 current?	Go to Step 11	Go to Step 9

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Fig. 15: DTC B1021 - Driver Initiator Circuit Resistance High (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1021 - DRIVER INITIATOR CIRCUIT RESISTANCE HIGH (2 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
9	1. Ignition switch "OFF." 2. Remove the Inflator Module from the steering wheel. 3. Reconnect yellow 2-way electrical connector at the base of the steering column. 4. Connect J 38715-A to SIR coil assembly connector on the steering column. 5. Ignition switch "ON." 6. Is DTC B1021 current?	Go to Step 6	Go to Step 10
10	1. Ignition switch "OFF." 2. Replace the Inflator Module. 3. Has the Inflator Module been replaced?	Go to Step 20	—
11	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Disconnect the DERM. 4. Check for proper connection to the DERM at terminals "B8" and "B9." 5. Is the DERM electrical harness connector damaged or corroded?	Go to Step 12	Go to Step 14
12	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 13	—
13	1. Check for proper connection to the DERM at terminals "B8" and "B9." 2. Are the DERM terminals damaged or corroded?	Go to Step 15	Go to Step 20
14	1. Check for proper connection to the DERM at terminals "B8" and "B9." 2. Are the DERM terminals damaged or corroded?	Go to Step 15	Go to Step 16
15	1. Ignition switch "OFF." 2. Replace the DERM. 3. Has the DERM been replaced?	Go to Step 20	—
16	1. Measure the resistance from the DERM electrical harness connector terminal "B8" to the yellow 2-way electrical connector terminal "B." 2. Is the resistance 1.0 ohm or less?	Go to Step 18	Go to Step 17
17	1. Repair the high resistance in CKT 348. 2. Has the high resistance been repaired?	Go to Step 20	—
18	1. Measure the resistance from the DERM electrical harness connector terminal "B9" to the yellow 2-way electrical connector terminal "A." 2. Is the resistance 1.0 ohm or less?	Go to Table A	Go to Step 19
19	1. Repair the high resistance in CKT 347. 2. Has the high resistance been repaired?	Go to Step 20	—
20	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 21	—
21	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 16: DTC B1021 - Driver Initiator Circuit Resistance High (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1022 - DRIVER INITIATOR CIRCUIT RESISTANCE LOW

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During INITIATOR ASSEMBLY RESISTANCE test, DERM grounds DRIVER-SIDE LOW terminal No. B8 and turns on driver current source at DRIVER-SIDE HIGH terminal No. B9. This causes a known amount of current flow through driver initiator circuit. By monitoring difference between voltage at DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8, DERM calculates combined resistance of driver-side air bag module, SIR coil assembly, harness wiring CKTs 347 and 348 and connector terminal contact.

DTC Will Set

When the combined resistance of the driver-side air bag module, SIR coil assembly, harness wiring CKTs 347 and 348 and connector terminal contact is above a specified value. This test is run once each ignition cycle during INITIATOR ASSEMBLY RESISTANCE test when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING for 1 second.
3) No CRANK signal is present.
4) IGNITION 1 voltage is above a specified value

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between CKT 347 and CKT 348, or a malfunctioning shorting bar on driver-side air bag module or SIR coil assembly which would require replacement of component. The test for this diagnostic trouble code is only run while AIR BAG indicator is performing BULB TEST. When scan tool CLEAR CODES command is issued and malfunction is still present, DTC will not reappear until next ignition cycle.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) This test checks for proper connector engagement.

3) This test determines if problem is in steering column or SIR harness.

4) This test checks for short between CKTs 347 and 348.

6) This test isolates the malfunction to either the SIR coil assembly or air bag module.

DTC B1022 - DRIVER INITIATOR CIRCUIT RESISTANCE LOW (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Reconnect the yellow 2-way electrical connector at the base of the steering column. 4. Ensure connector is properly seated and CPA is installed properly. 5. Ignition switch "ON." 6. Is DTC B1022 current?	Go to Step 3	Go to Step 9
3	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Connect J 38715-A Driver/Passenger Load Tool to harness side of the yellow 2-way electrical connector at the base of the steering column. 4. Ignition switch "ON." 5. Is DTC B1022 current?	Go to Step 4	Go to Step 6
4	1. Ignition switch "OFF." 2. Disconnect J 38715-A (**DO NOT** reconnect yellow 2-way connector at the base of the steering column). 3. Disconnect the DERM. 4. Measure the resistance on the DERM electrical harness connector from terminal "B8" to terminal "B9." 5. Does J 39200 display "OL" (infinite)?	Go to Table A	Go to Step 5
5	1. Repair the short from CKT 347 to CKT 348. 2. Has the short been repaired?	Go to Step 9	—
6	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Remove the Inflator Module from the steering wheel. 4. Connect J 38715-A to inflator module connector on steering column and reconnect yellow 2-way connector at the base of the steering column. 5. Ignition switch "ON." 6. Is DTC B1022 current?	Go to Step 7	Go to Step 8

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Fig. 17: DTC B1022 - Driver Initiator Circuit Resistance Low (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1022 - DRIVER INITIATOR CIRCUIT RESISTANCE LOW (2 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
7	1. Ignition switch "OFF." 2. Replace the SIR coil assembly. 3. Has the SIR coil assembly been replaced?	Go to Step 9	—
8	1. Ignition switch "OFF." 2. Replace the Inflator Module. 3. Has the Inflator Module been replaced?	Go to Step 9	—
9	1. Reconnect all the SIR system components. 2. Ensure the component are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 10	—
10	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 18: DTC B1022 - Driver Initiator Circuit Resistance Low (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During normal, non-deployment operation, a small amount of current flows through driver deployment loop. Diagnosis resistors within arming sensor and discriminating sensors, along with resistance of air bag module, cause voltage drops within deployment loop. DERM monitors voltage at DRIVER-SIDE LOW terminal No. B8 to detect shorts or opens within driver deployment loop. When measured voltage is above a specified percentage of DRIVER 36 VLR for 500 milliseconds, DTC B1023 will set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is above a specified percentage of DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING and DTC B1035 is not set.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified percentage of DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING.

Diagnostic Aids

An intermittent condition is likely to be caused by backed out or shorted terminals on arming sensor harness connector, poor connection at any of the discriminating sensor terminals, a short from CKT 236 to CKT 347 or CKT 348, a short from CKT 347 to CKT 1400, or an open or high resistance in CKTs 348.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) This test checks whether malfunction is due to a component or the wiring.

3) This test checks for short from DRIVER 36 VLR circuit to DRIVER-SIDE LOW circuit.

5) This test checks for short from DRIVER 36 VLR circuit to DRIVER-SIDE HIGH circuit.

6) This test determines where the short from DRIVER 36 VLR circuit to DRIVER-SIDE HIGH circuit is located.

13) This test checks for open between driver-side air bag module and discriminating sensor network.

16) This test determines where the open in CKT 348 is located.

19) This test checks for open in left forward discriminating sensor between terminal Nos. A and B.

20) This test checks for short inside arming sensor.

23) This test checks for short in DRIVER-SIDE HIGH circuit to the DRIVER-SIDE LOW circuit.

26) This test determines where the short from DRIVER-SIDE HIGH circuit to the DRIVER-SIDE LOW circuit is located.

29) This test checks for partial short inside arming sensor.

32) This test checks for increased resistance of discriminating sensor intermediate harness and/or the left forward discriminating sensor.

37) This test checks for increased resistance of left forward discriminating sensor.

38) This test checks for increased resistance of discriminating sensor intermediate harness and/or the right forward discriminating sensor.

43) This test checks for increased resistance of right forward discriminating sensor.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH (1 OF 5)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "ON." 2. Using the Tech-1 SIR Data List function select "DRIVER LO." 3. Is the displayed voltage 30.0 volts or more?	Go to Step 3	Go to Step 21
3	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the Arming Sensor. 4. Disconnect the DERM. 5. Measure the resistance on the DERM electrical harness connector from terminal "A4" to terminal "B8." 6. Does J 39200 display "OL" (infinite)?	Go to Step 5	Go to Step 4
4	1. Repair the short from CKT 236 to CKT 348 or 349. 2. Has the short from CKT 236 to CKT 348 or 349 been repaired?	Go to Step 47	—
5	1. Measure the resistance on the DERM electrical harness connector from terminal "A4" to terminal "B9." 2. Does J 39200 display "OL" (infinite)?	Go to Step 9	Go to Step 6

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Fig. 19: DTC B1023 - Driver Initiator Circuit Voltage High (1 Of 5)
Courtesy of GENERAL MOTORS CORP.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH (2 OF 5)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
6	1. Disconnect the Arming Sensor jumper harness electrical connector (C106). 2. Measure the resistance on the DERM electrical harness connector from terminal "A4" to terminal "B9." 3. Does J 39200 display "OL" (infinite)?	Go to Step 7	Go to Step 8
7	1. Repair the short from CKT 236 to CKT 347. 2. Has the short from CKT 236 to CKT 347 been repaired?	Go to Step 47	—
8	1. Repair the short from CKT 236 to CKT 347. 2. Has the short from CKT 236 to CKT 347 been repaired?	Go to Step 47	—
9	1. Disconnect the LH Forward Discriminating Sensor. 2. Check for proper connection on the LH Forward Discriminating Sensor electrical harness connector terminals. 3. Is the connector damaged or corroded?	Go to Step 11	Go to Step 10
10	1. Check for proper connection at the LH Forward Discriminating Sensor terminals. 2. Are the LH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 44	Go to Step 13
11	1. Repair the LH Forward Discriminating Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 12	—
12	1. Check for proper connection on the LH Forward Discriminating Sensor terminals. 2. Are the LH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 44	Go to Step 47
13	1. Measure the resistance from the harness side of the yellow 2-way electrical connector at the base of the steering column terminal "B" to the LH Forward Discriminating Sensor electrical harness electrical connector terminal "A." 2. Is the resistance 5.0 ohms or less?	Go to Step 19	Go to Step 14
14	1. Disconnect the Discriminating Sensor jumper harness electrical connector C109. 2. Check for proper connection at terminal "A" of the Discriminating Sensor jumper harness electrical connector. 3. Is the connector damaged or corroded?	Go to Step 15	Go to Step 16
15	1. Repair the Discriminating Sensor jumper harness electrical connector C109. 2. Has the connector been repaired?	Go to Step 47	—
16	1. Measure the resistance of CKT 348 from the harness side of the yellow 2-way electrical connector at the base of the steering column terminal "B" to the Discriminating Sensor jumper harness electrical connector C109. terminal "A." 2. Is the resistance 5.0 ohms or less?	Go to Step 17	Go to Step 18
17	1. Repair the open in CKT 348. 2. Has the open CKT been repaired?	Go to Step 47	—
18	1. Repair the open in CKT 348. 2. Has the open CKT 348 been repaired?	Go to Step 47	—

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Fig. 20: DTC B1023 - Driver Initiator Circuit Voltage High (2 Of 5)
Courtesy of GENERAL MOTORS CORP.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH (3 OF 5)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
19	1. Measure the resistance on the LH Forward Discriminating Sensor from terminal "A" to terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 20	Go to Step 44
20	1. Measure the resistance on the Arming Sensor from terminal "C" to terminal "D." 2. Is the resistance 7.5k ohms or less?	Go to Step 46	Go to Table A
21	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the Arming Sensor. 4. Disconnect the DERM. 5. Inspect the Arming Sensor electrical harness connector for backed out and/or shorted terminals. 6. Is the Arming Sensor electrical harness connector damaged or shorted?	Go to Step 22	Go to Step 23
22	1. Repair the Arming Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 47	—
23	1. Measure the resistance on the Arming Sensor electrical harness connector from terminal "C" to terminal "D." 2. Does J 39200 display "OL" (infinite)?	Go to Step 29	Go to Step 24
24	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Inspect the Arming Sensor jumper harness electrical connector C110 for backed out and/or shorted terminals. 3. Is the connector damaged or shorted?	Go to Step 25	Go to Step 26
25	1. Repair the Arming Sensor jumper harness connector C110. 2. Has the connector been repaired?	Go to Step 47	—
26	1. Measure the resistance on the Arming Sensor jumper harness electrical connector (bulkhead side) from terminal "C" to terminal "D." 2. Does J 39200 display "OL" (infinite)?	Go to Step 28	Go to Step 27
27	1. Repair the short from CKT 347 to CKT 1400. 2. Has the short CKT been repaired?	Go to Step 47	—
28	1. Repair the short from CKT 347 to CKT 1400. 2. Has the short from CKT 347 to CKT 1400 been repaired?	Go to Step 47	—
29	1. Measure the resistance on the Arming Sensor from terminal "C" to terminal "D." 2. Is the resistance 7.5k ohms or less?	Go to Step 46	Go to Step 30
30	1. Disconnect the Discriminating Sensor jumper harness electrical connector C109. 2. Inspect the Discriminating Sensor jumper harness electrical connector C109. 3. Are the connector terminals damaged or corroded?	Go to Step 31	Go to Step 32
31	1. Repair the Discriminating Sensor jumper harness electrical connector C109. 2. Has the connector been repaired?	Go to Step 47	—

97E05617 Courtesy of General Motors Corp.

Fig. 21: DTC B1023 - Driver Initiator Circuit Voltage High (3 Of 5)
Courtesy of GENERAL MOTORS CORP.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH (4 OF 5)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
32	1. Measure the resistance at the Discriminating Sensor jumper harness electrical connector C109 (engine harness side) from terminal "A" to terminal "B." 2. Is the resistance 8.54k ohms or more?	Go to Step 33	Go to Step 38
33	1. Disconnect the LH Forward Discriminating Sensor. 2. Check for proper connection on the LH Forward Discriminating Sensor electrical harness connector terminals "A," "B" and "C." 3. Are the connector terminals damaged or corroded?	Go to Step 34	Go to Step 36
34	1. Repair the LH Forward Discriminating Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 35	—
35	1. Check for proper connection on the LH Forward Discriminating Sensor connector terminals "A," "B" and "C." 2. Are the connector terminals damaged or corroded?	Go to Step 44	Go to Step 47
36	1. Check for proper connection on the LH Forward Discriminating Sensor connector terminals "A," "B" and "C." 2. Are the connector terminals damaged or corroded?	Go to Step 44	Go to Step 37
37	1. Measure the resistance on the LH Forward Discriminating Sensor from terminal "A" to terminal "C." 2. Is the resistance 8.54k ohms or more?	Go to Step 44	Go to Step 38
38	1. Reconnect LH Foward Discriminating Sensor if disconnected. 2. Measure the resistance at the Discriminating Sensor jumper harness electrical connector C109 (engine harness side) from terminal "A" to terminal "C." 3. Is the resistance 8.54k ohms or more?	Go to Step 39	Go to Table A
39	1. Disconnect the RH Forward Discriminating Sensor. 2. Check for proper connection to the RH Forward Discriminating Sensor electrical harness connector at terminals "A" and "B." 3. Are the connector terminals damaged or corroded?	Go to Step 40	Go to Step 42
40	1. Repair the RH Forward Discriminating Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 41	—
41	1. Check for proper connection on the RH Forward Discriminating Sensor connector terminals "A" and "B." 2. Is the connector damaged or corroded?	Go to Step 45	Go to Step 47
42	1. Check for proper connection on the RH Forward Discriminating Sensor connector terminals "A" and "B." 2. Is the connector damaged or corroded?	Go to Step 45	Go to Step 43
43	1. Measure the resistance on the RH Forward Discriminating Sensor from terminal "A" to terminal "B." 2. Is the resistance 8.54k ohms or more?	Go to Step 45	Go to Table A
44	1. Replace the LH Forward Discriminating Sensor. 2. Has the sensor been replaced?	Go to Step 47	—

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Courtesy of General Motors Corp.

Fig. 22: DTC B1023 - Driver Initiator Circuit Voltage High (4 Of 5)
Courtesy of GENERAL MOTORS CORP.

DTC B1023 - DRIVER INITIATOR CIRCUIT VOLTAGE HIGH (5 OF 5)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
45	1. Replace the RH Forward Discriminating Sensor. 2. Has the sensor been replaced?	Go to Step 47	—
46	1. Replace the Arming Sensor. 2. Has the sensor been replaced?	Go to Step 47	—
47	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR system components been reconnected and properly mounted?	Go to Step 48	—
48	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 23: DTC B1023 - Driver Initiator Circuit Voltage High (5 Of 5)
Courtesy of GENERAL MOTORS CORP.

DTC B1024 - DRIVER INITIATOR CIRCUIT VOLTAGE LOW

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During normal, non-deployment operation, a small amount of current flows through driver deployment loop. Diagnostic resistors within arming sensor and discriminating sensors, along with resistance of air bag module, cause voltage drops within deployment loop. DERM monitors voltage at DRIVER-SIDE LOW terminal No. B8 to detect shorts or opens within driver deployment loop. When measured voltage is below a specified percentage of DRIVER 36 VLR for 500 milliseconds, DTC B1024 will set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is below a specified percentage of DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified percentage of DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at DERM terminal No. A4, arming sensor or arming sensor jumper harness electrical connector terminal Nos. B or D, water intrusion in either discriminating sensor, an open in CKT 347, or a short to ground on CKT 347, CKT 348 or 349. Refer to DTC B1025 to diagnose possible short to B+. When malfunction occurs during an ignition cycle, DTC B1024 will set. If malfunction is present at beginning of next ignition cycle, DTC B1025 will set and DTC B1024 will be moved to history file.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2) This test determines if malfunction is in steering column circuitry.
4) This test checks whether malfunction is due to a component or the wiring.
17) This test checks for increased resistance of arming sensor.
18) This test checks for partial short inside left forward discriminating sensor.
20) This test checks for partial short inside right forward discriminating sensor.
24) This test checks for open in CKT 347.
26) This test determines where the open in CKT 347 is located.
29) This test checks for short from DRIVER-SIDE HIGH circuit to ground.
31) This test checks for short from DRIVER-SIDE LOW circuit to ground.
33) This test checks for short from discriminating sensor interconnect circuit to ground.
35) This test checks for short inside left forward discriminating sensor.
36) This test checks for short inside right forward discriminating sensor.

DTC B1024 - DRIVER INITIATOR CIRCUIT VOLTAGE LOW (1 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Connect J 38715-A SIR Driver/Passenger Load Tool to harness side of yellow 2-way electrical connector. 4. Ignition switch "ON." 5. Is DTC B1024 current?	Go to Step 4	Go to Step 3
3	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Remove the Inflator Module from the steering wheel. 4. Remove and inspect the SIR coil assembly. 5. Determine and repair the cause of damage. 6. Replace the SIR coil assembly. 7. Has the SIR coil assembly been replaced?	Go to Step 37	—
4	1. Using the Tech-1 SIR Data List function select "DRIVER LO." 2. Is the voltage displayed 1.0 volt or less?	Go to Step 22	Go to Step 5
5	1. Ignition switch "OFF." 2. Disconnect the DERM. 3. Check for proper connection to the DERM at terminal "A4." 4. Is the DERM electrical harness connector terminal "A4" damaged or corroded?	Go to Step 6	Go to Step 8
6	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 7	—

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Fig. 24: DTC B1024 - Driver Initiator Circuit Voltage Low (1 Of 4)
Courtesy of GENERAL MOTORS CORP.

DTC B1024 - DRIVER INITIATOR CIRCUIT VOLTAGE LOW (2 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
7	1. Check for proper connection to the DERM at terminal "A4." 2. Are the DERM terminals damaged or corroded?	Go to Step 9	Go to Step 37
8	1. Check for proper connection to the DERM at terminal "A4." 2. Are the DERM terminals damaged or corroded?	Go to Step 9	Go to Step 10
9	1. Replace the DERM. ENERGY RESERVE 2. Has the DERM been replaced?	Go to Step 37	—
10	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Check the Arming Sensor jumper harness electrical connector C110 for proper connection. 3. Is the connector C110 damaged or corroded?	Go to Step 11	Go to Step 12
11	1. Repair the Arming Sensor jumper harness electrical connector C110. 2. Has the connector been repaired?	Go to Step 37	—
12	1. Disconnect the Arming Sensor. 2. Check for proper connection to the Arming Sensor at terminals "B" and "D." 3. Is the Arming Sensor electrical harness connector damaged or corroded?	Go to Step 13	Go to Step 15
13	1. Repair the Arming Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 14	—
14	1. Check for proper connection to the Arming Sensor at terminals "B" and "D." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 16	Go to Step 37
15	1. Check for proper connection to the Arming Sensor at terminals "B" and "D." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 16	Go to Step 17
16	1. Replace the Arming Sensor. 2. Has the Arming Sensor been replaced?	Go to Step 37	—
17	1. Measure the resistance of the Arming Sensor from terminal "C" to terminal "D." 2. Is the resistance 7.67k ohms or more?	Go to Step 16	Go to Step 18
18	1. Disconnect the Discriminating Sensor jumper harness electrical connector C109. 2. Measure resistance on Discriminating Sensor jumper harness electrical connector C109 (engine harness side) from terminal "A" to terminal "B." 3. Is resistance 8.36k ohms or less?	Go to Step 19	Go to Step 20
19	1. Replace the LH Forward Discriminating Sensor. Refer to ON-VEHICLE, FORWARD DISCRIMINATING SENSORS (RH AND LH). 2. Has the LH Forward Discriminating Sensor been replaced?	Go to Step 37	—
20	1. Measure the resistance on the Discriminating Sensor jumper harness electrical connector C109 (engine harness side) from terminal "A" to terminal "C." 2. Is the resistance 8.36k ohms or less?	Go to Step 21	Go to Table A

97I05619 Courtesy of General Motors Corp.

Fig. 25: DTC B1024 - Driver Initiator Circuit Voltage Low (2 Of 4)

1997 Chevrolet S10 Pickup

AIR BAG RESTRAINT SYSTEM 1997 ACCESSORIES/SAFETY EQUIPMENT General Motors - Air Bag Restraint System

Courtesy of GENERAL MOTORS CORP.

DTC B1024 - DRIVER INITIATOR CIRCUIT VOLTAGE LOW (3 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
21	1. Replace the RH Forward Discriminating Sensor. 2. Has the RH Forward Discriminating Sensor been replaced?	Go to Step 37	—
22	1. Ignition switch "OFF." 2. Disconnect the DERM. 3. Disconnect the Arming Sensor. 4. Check for proper connection on the Arming Sensor electrical harness connector terminal "D." 5. Are the Arming Sensor electrical harness connector terminals damaged or corroded?	Go to Step 13	Go to Step 23
23	1. Check for proper connection on the Arming Sensor at terminal "D." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 16	Go to Step 24
24	1. Disconnect J 38715-A Driver/Passenger Load Tool. 2. Measure the resistance from the Arming Sensor electrical harness connector terminal "D" to harness side of the yellow 2-way connector at the base of the steering column terminal "A." 3. Is the resistance 5.0 ohms or less?	Go to Step 29	Go to Step 25
25	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Check for proper connection at Arming Sensor jumper harness electrical connector C110. 3. Are the connector terminals damaged or corroded?	Go to Step 11	Go to Step 26
26	1. Measure the resistance of CKT 347 from the harness side of the yellow 2-way electrical connector at the base of the steering column terminal "A" to the bulk head side of the Arming Sensor jumper harness electrical connector C110 terminal "D." 2. Is the resistance 5.0 ohms or less?	Go to Step 27	Go to Step 28
27	1. Repair the open in CKT 347 in arming sensor jumper harness. 2. Has the open CKT been repaired?	Go to Step 37	—
28	1. Repair open in CKT 347 in SIR wiring harness. 2. Has open CKT been repaired?	Go to Step 37	—
29	1. Measure the resistance on the DERM electrical harness connector from terminal "B9" to "A1" (ground). 2. Does J 39200 display "OL" (infinite)?	Go to Step 31	Go to Step 30
30	1. Repair the short from CKT 347 to ground. 2. Has the short to ground been repaired?	Go to Step 37	—
31	1. Disconnect the LH Forward Discriminating Sensor. 2. Measure the resistance on the DERM electrical harness connector from terminal "B8" to terminal "A1" (ground). 3. Does J 39200 display "OL" (infinite)?	Go to Step 33	Go to Step 32
32	1. Repair the short from CKT 348 to ground. 2. Has the short to ground been repaired?	Go to Step 37	—
33	1. Disconnect the RH Forward Discriminating Sensor. 2. Measure the resistance on the LH Forward Discriminating Sensor electrical harness connector from terminal "B" to terminal "C" (ground). 3. Does J 39200 display "OL" (infinite)?	Go to Step 35	Go to Step 34

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Courtesy of General Motors Corp.

Fig. 26: DTC B1024 - Driver Initiator Circuit Voltage Low (3 Of 4)

Courtesy of GENERAL MOTORS CORP.

DTC B1024 - DRIVER INITIATOR CIRCUIT VOLTAGE LOW (4 OF 4)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
34	1. Repair the short from CKT 349 to ground. 2. Has the short to ground been repaired?	Go to Step 37	—
35	1. Reconnect the RH Forward Discriminating Sensor. 2. Measure the resistance of the LH Forward Discriminating Sensor from terminal "A" to terminal "C." 3. Is the resistance 8.36k ohms or less?	Go to Step 19	Go to Step 36
36	1. Measure the resistance on the LH Forward Discriminating Sensor electrical harness connector from terminal "B" to terminal "C." 2. Is resistance 8.36k ohms or less?	Go to Step 21	Go to Table A
37	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR system components been reconnected and properly mounted?	Go to Step 38	—
38	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check	—

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Fig. 27: DTC B1024 - Driver Initiator Circuit Voltage Low (4 Of 4)
Courtesy of GENERAL MOTORS CORP.

DTC B1025 - DRIVER INITIATOR CIRCUIT SHORT TO IGNITION

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During INITIATOR ASSEMBLY RESISTANCE TEST, DERM grounds DRIVER-SIDE LOW terminal No. B8 through internal resistor and measures voltage at DRIVER-SIDE LOW. For properly operating circuit the voltage measurement will be below a specified value. When voltage measured at DRIVER-SIDE LOW is above a specified value, DTC B1025 will set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is above a specified value while DERM attempts to ground terminal. This test is run during INITIATOR ASSEMBLY RESISTANCE TEST and 10

MINUTE LOOP TEST when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING for 1 second.
3) No CRANK signal present.
4) IGNITION 1 is above a specified value.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is below a specified value while DERM grounds terminal..

Diagnostic Aids

This diagnostic trouble code can only be set when malfunction is present as ignition switch is turned ON. After INITIATOR ASSEMBLY RESISTANCE TEST is completed, a short to B+ in steering column, CKT 347, CKT 348 or CKT 349 will cause DTC B1024 to set. When a scan tool clear codes command is issued and malfunction is still present, DTC B10will not reappear for 10 minutes or until next ignition cycle.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2) This test determines whether malfunction is occurring in steering column wiring.
4) This test checks for short from DRIVER-SIDE HIGH circuit to B+.
6) This test checks for short from DRIVER-SIDE LOW circuit to B+.
8) This test checks for short from discriminating sensor interconnect circuit to B+.

DTC B1025 - DRIVER INITIATOR CIRCUIT SHORT TO IGNITION (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Connect J 38715-A SIR Driver/Passenger Load Tool to harness side of the yellow 2-way electrical connector at the base of the steering column. 4. Ignition switch "ON." 5. Is DTC B1025 current?	Go to Step 4	Go to Step 3
3	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Remove the Inflator Module from the steering wheel. 4. Remove the SIR coil assembly. 5. Inspect the SIR coil assembly for damage. 6. Determine the cause of the damage and repair. 7. Replace the SIR coil assembly. 8. Has the SIR coil assembly been replaced?	Go to Step 10	—
4	1. Ignition switch "OFF." 2. Disconnect the DERM. 3. Disconnect the Arming Sensor. 4. Disconnect the LH Forward Discriminating Sensor. 5. Disconnect J 38715-A. 6. Ignition switch "ON." 7. Measure the voltage on the DERM electrical harness connector from terminal "B9" to terminal "A1" (ground). 8. Is the voltage 1.0 volt or less?	Go to Step 6	Go to Step 5
5	1. Ignition switch "OFF." 2. Repair the short from CKT 347 to B+. 3. Has the short CKT been repaired?	Go to Step 10	—
6	1. Measure the voltage on the DERM electrical harness connector from terminal "B8" to termainal "A1" (ground). 2. Is the voltage 1.0 volt or less?	Go to Step 8	Go to Step 7

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Fig. 28: DTC B1025 - Driver Initiator Circuit Short to Ignition (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1025 - DRIVER INITIATOR CIRCUIT SHORT TO IGNITION (2 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
7	1. Ignition switch "OFF." 2. Repair the short from CKT 348 to B+. 3. Has the short CKT been repaired?	Go to Step 10	—
8	1. Measure the voltage on the LH Forward Discriminating Sensor electrical harness connector from terminal "B" to terminal "C" (ground). 2. Is the voltage 1.0 volt or less?	Go to Table A	Go to Step 9
9	1. Ignition switch "OFF." 2. Repair the short from CKT 349 to B+. 3. Has the short circuit been repaired?	Go to Step 10	—
10	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 11	—
11	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 29: DTC B1025 - Driver Initiator Circuit Short to Ignition (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1026 - DRIVER INITIATOR CIRCUIT OPEN

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When there is an open in driver-side air bag module or SIR coil assembly, resistance between DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8 increases. This causes a larger voltage drop from DRIVER-SIDE HIGH to DRIVER-SIDE LOW across a resistor inside DERM which connects these 2 terminals. The increase in voltage difference between DRIVER-SIDE HIGH and DRIVER-SIDE low is detected by DERM during CONTINUOUS MONITORING tests and DTC B1026 will set.

DTC Will Set

When voltage difference between DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8 is above or equal to a specified value for 500 milliseconds.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage difference between DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8 is below a specified value for 500 milliseconds.

Diagnostic Aids

This diagnostic trouble code will only set when there is an improper connection of either the **Yellow** 2-way connector at the base of the steering column or the **Yellow** 2-way connector at the top of the steering column, an open SIR coil assembly or an open air bag module.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
7) This test determines whether a steering column malfunction is occurring.
8) This test determines whether malfunction is occurring in air bag module or SIR coil assembly.

DTC B1026 - DRIVER INITIATOR CIRCUIT OPEN

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Check for proper connection on the SIR coil assembly electrical harness connector. 4. Are connector terminals damaged or corroded?	Go to Step 6	Go to Step 4
3	1. Ignition switch "OFF." 2. Replace the SIR coil assembly. 3. Has the SIR Coil assembly been replaced?	Go to Step 10	—
4	1. Check for proper connection on the SIR coil assembly connector. 2. Is connector damaged or corroded?	Go to Step 3	Go to Step 7
5	1. Check for proper connection on the SIR coil assembly connector. 2. Is the connector damaged or corroded?	Go to Step 3	Go to Step 10
6	1. Repair the SIR coil assembly electrical harness connector. 2. Has connector been repaired?	Go to Step 5	—
7	1. Connect J 38715-A SIR Driver/Passenger Load Tool to yellow 2-way electrical connector at the base of the steering column. 2. Ignition switch "ON." 3. Is DTC B1026 current?	Go to Table A	Go to Step 8
8	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Remove the Inflator Module from the steering wheel. 4. Connect J 38715-A to Inflator Module electrical connector on the steering column. 5. Reconnect the yellow 2-way connector at the base of the steering column. 6. Ignition switch "ON." 7. Is DTC B1026 current?	Go to Step 3	Go to Step 9
9	1. Ignition switch "OFF." 2. Replace the Inflator Module. 3. Has the Inflator Module been replaced?	Go to Step 10	—
10	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 11	—
11	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

96B14366

Fig. 30: DTC B1026 - Driver Initiator Circuit Open
Courtesy of GENERAL MOTORS CORP.

DTC B1028 - CURRENT SINK OR SOURCE FAILURE

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During INITIATOR ASSEMBLY RESISTANCE test, DERM grounds DRIVER-SIDE LOW terminal No. B8 and turns on driver current source at DRIVER-SIDE HIGH terminal No. B9. During this test, DERM monitors voltage at DRIVER-SIDE LOW and difference between DRIVER-SIDE HIGH and DRIVER-SIDE LOW. When measured voltages are outside expected range, DTC B1028 will set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW is below a specified value while its initiator resistance is in range or when voltage measured at DRIVER-SIDE LOW is above a specified value. This test is run once each ignition cycle during INITIATOR ASSEMBLY RESISTANCE TEST when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING for 1 second.
3) No CRANK signal present.
4) IGNITION 1 voltage is above a specified value.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

During INITIATOR ASSEMBLY RESISTANCE test, DERM checks for proper resistance of CKT 347, 348, SIR coil assembly and air bag module. This test is performed by causing a known amount of current through a known amount of resistance causing a known amount of voltage at DRIVER-SIDE LOW. When measured resistance is in range and voltage at DRIVER-SIDE LOW is too high or too low, DTC B1028 will set.

DTC B1028 - CURRENT SINK OR SOURCE FAILURE

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Replace the DERM. 2. Has the DERM been replaced?	Go to "SIR Diagnostic System Check"	—

96C14367 Courtesy of General Motors Corp.

Fig. 31: DTC B1028 - Current Sink Or Source Failure
Courtesy of GENERAL MOTORS CORP.

DTC B1031 - DRIVER LOOP ENERGY RESERVE FEED OPEN

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During CONTINUOUS MONITORING tests, DERM monitors voltage at DRIVER SOURCE SENSE terminal No. A5. When circuit is operating normally the measured voltage will be slightly less than DRIVER 36 VLR. If DRIVER 36 VLR circuit opens, voltage measured at DRIVER SOURCE SENSE will decrease to slightly less than IGNITION 1 voltage. When voltage measured at DRIVER SOURCE SENSE is within a specified range of IGNITION 1 for 500 milliseconds, DTC is set.

DTC Will Set

When voltage measured at DRIVER SOURCE SENSE terminal No. A5 is within a specified range of IGNITION 1 for 500 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER SOURCE SENSE terminal No. A5 is outside a specified range of IGNITION 1 for 500 milliseconds.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at arming sensor or arming sensor jumper harness electrical connector (C110) terminal Nos. B or C, poor connection at DERM terminal Nos. A4 or A5, an open in CKT 236 or CKT 1400 to B+, or high resistance inside arming sensor.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

12) This test checks for an open in DRIVER 36 VLR circuit between the DERM and arming sensor connector.

15) This test checks for an open in DRIVER 36 VLR circuit between the DERM and arming sensor jumper harness connector.

18) This test checks for high resistance in DRIVER SOURCE SENSE circuit between DERM and arming sensor connector.

21) This test checks for high resistance in DRIVER SOURCE SENSE circuit between DERM and arming sensor jumper harness electrical connector (C110).

24) This test checks for a short from DRIVER SOURCE SENSE circuit to B+.

DTC B1031 - DRIVER LOOP ENERGY RESERVE FEED OPEN (1 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the Arming Sensor. 4. Check for proper connection to Arming Sensor at terminals "B" and "C." 5. Are the Arming Sensor electrical harness connector terminals damaged or corroded?	Go to Step 3	Go to Step 4
3	1. Repair the Arming Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
4	1. Check for proper connection to the Arming Sensor at terminals "B" and "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 6	Go to Step 7
5	1. Check for proper connection to the Arming Sensor at terminals "B" and "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 6	Go to Step 27
6	1. Replace the Arming Sensor. 2. Has the Arming Sensor been replaced?	Go to Step 27	—
7	1. Disconnect the DERM. 2. Check for proper connection to the DERM at terminals "A4" and "A5." 3. Are the DERM electrical harness connector terminals damaged or corroded?	Go to Step 8	Go to Step 9
8	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 10	—
9	1. Check for proper connection to the DERM at terminals "A4" and "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 11	Go to Step 12

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Fig. 32: DTC B1031 - Driver Loop Energy Reserve Feed Open (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1031 - DRIVER LOOP ENERGY RESERVE FEED OPEN (2 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
10	1. Check for proper connection to the DERM at terminals "A4" and "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 11	Go to Step 27
11	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 27	—
12	1. Measure the resistance from the DERM electrical harness connector terminal "A4" to the Arming Sensor electrical harness connector terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 18	Go to Step 13
13	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Is the connector terminal "B" damaged or corroded?	Go to Step 14	Go to Step 15
14	1. Repair the Arming Sensor jumper harness electrical connector 2. Has the connector been repaired?	Go to Step 27	—
15	1. Measure the resistance of CKT 236 from the DERM electrical harness connector terminal "A4" to the Arming Sensor jumper harness electrical connector C110 terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 16	Go to Step 17
16	1. Repair the open in CKT 236 in arming sensor jumper harness. 2. Has the open CKT been repaired?	Go to Step 27	—
17	1. Repair the open in CKT 236 in SIR wiring harness. 2. Has the open CKT been repaired?	Go to Step 27	—
18	1. Measure the resistance of CKT 1400 from the DERM electrical harness connector terminal "A5" to the Arming Sensor electrical harness connector terminal "C." 2. Is the resistance 5.0 ohms or less?	Go to Step 24	Go to Step 19
19	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Is the connector terminal "C" damaged or corroded?	Go to Step 20	Go to Step 21
20	1. Repair Arming Sensor jumper harness electrical connector 2. Has the connector been repaired?	Go to Step 27	—
21	1. Measure the resistance of CKT 1400 from the DERM electrical harness connector terminal "A5" to the Arming Sensor jumper harness electrical connector C110 terminal "C." 2. Is the resistance 5.0 ohms or less?	Go to Step 22	Go to Step 23
22	1. Repair the high resistance in CKT 1400 in arming sensor jumper harness. 2. Has the high resistance been repaired?	Go to Step 27	—
23	1. Repair the high resistance in CKT 1400 in SIR wiring harness. 2. Has the high resistance been repaired?	Go to Step 27	—
24	1. Ignition switch "ON." 2. Measure the voltage on the DERM electrical harness connector from terminal "A5" to terminal "A12" (ground). 3. Is the voltage 1 volt or less?	Go to Step 26	Go to Step 25

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Fig. 33: DTC B1031 - Driver Loop Energy Reserve Feed Open (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1031 - DRIVER LOOP ENERGY RESERVE FEED OPEN (3 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
25	1. Ignition switch "OFF." 2. Repair the short from CKT 1400 to B+. 3. Has the short CKT been repaired?	Go to Step 27	—
26	1. Ignition switch "OFF." 2. Replace the Arming Sensor. 3. Has the Arming Sensor been replaced?	Go to Table A	—
27	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 28	—
28	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

96H14370 Courtesy of General Motors Corp.

Fig. 34: DTC B1031 - Driver Loop Energy Reserve Feed Open (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1034 - ARMING SENSOR IGNITION FEED OPEN

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During Turn ON tests, performed at beginning of each ignition cycle, DERM delays charging of DRIVER 36 VLR power supply. While delay is active, DERM measures voltage at DRIVER 36 VLR terminal No. A4 and DRIVER SOURCE SENSE terminal No. A5. When voltage measured at DRIVER 36 VLR power supply indicates it is in a discharged state and voltage measured at DRIVER SOURCE SENSE is a specified amount below IGNITION 1 voltage, DTC B1034 is set.

DTC Will Set

With DRIVER 36 VLR power supply in a discharged state, voltage measured at DRIVER SOURCE SENSE terminal No. A5 is a specified amount below IGNITION 1 voltage and no higher priority faults are detected. This test is run once each ignition cycle during Turn ON tests while 36 VLR delay is active.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When DRIVER 36 VLR power supply is in a discharged state, voltage measured at DRIVER SOURCE SENSE terminal No. A5 is within specified range of IGNITION 1 voltage. When neither the set nor clear conditions are met, the state of the diagnostic trouble code from the previous ignition cycle is used.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at arming sensor terminal Nos. A or C, poor connection at DERM terminal No. A5, open ignition feed to arming sensor, open DRIVER SOURCE SENSE circuit or a malfunctioning arming sensor diode. The test for this diagnostic trouble code is only run while AIR BAG indicator is performing BULB TEST. When a scan tool clear codes command is issued and malfunction is still present, DTC will not reappear until ignition switch is turned off for at least 2 minutes with entire SIR system connected, and then the ignition switch is turned ON.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

7) This test checks whether a malfunction is occurring.

13) This test checks for an open in arming sensor ignition feed circuit.

16) This test locates the open in arming sensor ignition feed circuit.

19) This test determines whether malfunction is an open in DRIVER SOURCE SENSE circuit or an open in arming sensor.

22) This test locates open in DRIVER SOURCE SENSE circuit.

DTC B1034 - ARMING SENSOR IGNITION FEED OPEN (1 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the DERM and check for proper connection at terminal "A5." 4. Is the DERM electrical harness connector damaged or corroded?	Go to Step 3	Go to Step 4
3	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
4	1. Check for proper connection to DERM at terminal "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 7
5	1. Check for proper connection to DERM at terminal "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 25
6	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 25	—
7	1. Ignition switch "ON." 2. Measure the voltage on the DERM electrical harness connector from terminal "A5" to terminal "A12" (ground). 3. Does meter indicate system voltage?	Go to Table A	Go to Step 8
8	1. Ignition switch "OFF." 2. Disconnect the Arming Sensor and check for proper connection at terminals "A" and "C". 3. Is the Arming Sensor electrical harness connector damaged or corroded?	Go to Step 9	Go to Step 10
9	1. Repair the Arming Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 11	—
10	1. Check for proper connection to the Arming Sensor at terminals "A" and "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 12	Go to Step 13

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Fig. 35: DTC B1034 - Arming Sensor Ignition Feed Open (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1034 - ARMING SENSOR IGNITION FEED OPEN (2 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
11	1. Check for proper connection to the Arming Sensor at terminals "A" and "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 12	Go to Step 25
12	1. Replace the Arming Sensor. 2. Has the Arming Sensor been replaced?	Go to Step 25	—
13	1. Ignition switch "ON." 2. Measure the voltage from the Arming Sensor electrical harness connector terminal "A" to the DERM electrical harness connector terminal "A12" (ground). 3. Does meter indicate system voltage?	Go to Step 19	Go to Step 14
14	1. Ignition switch "OFF." 2. Disconnect the Arming Sensor jumper harness electrical connector C110. 3. Check for proper connection of the Arming Sensor jumper harness electrical connector 4. Are the connector terminals damaged or corroded?	Go to Step 15	Go to Step 16
15	1. Repair the Arming Sensor jumper harness electrical connector 2. Has the connector been repaired?	Go to Step 25	—
16	1. Ignition switch "ON." 2. Measure the voltage from the Arming Sensor jumper harness electrical connector C110 (bulk head side of the harness) terminal "A" to the DERM electrical harness connector terminal "A12" (ground). 3. Does meter indicate system voltage?	Go to Step 17	Go to Step 18
17	1. Repair the open in CKT 1139 in arming sensor jumper harness. 2. Has the open CKT been repaired?	Go to Step 25	—
18	1. Repair open in CKT 1139 between arming sensor connector and S260. 2. Has the open CKT been repaired?	Go to Step 25	—
19	1. Ignition switch "OFF." 2. Measure the resistance from the Arming Sensor harness electrical connector terminal "C" to the DERM electrical harness connector terminal "A5." 3. Is the resistance 5.0 ohms or less?	Go to Step 12	Go to Step 20
20	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Check for proper connection of the Arming Sensor jumper harness electrical connector C110. 3. Is the connector terminal "C" damaged or corroded?	Go to Step 21	Go to Step 22
21	1. Repair the Arming Sensor jumper harness electrical connector C110. 2. Has the connector been repaired?	Go to Step 25	—
22	1. Ignition switch "OFF." 2. Measure the resistance of CKT 1400 from the Arming Sensor jumper harness electrical connector (C106) terminal "C" to the DERM electrical harness connector terminal "A5." 3. Is the resistance 5.0 ohms or less?	Go to Step 23	Go to Step 24
23	1. Repair the high resistance in CKT 1400. 2. Has the high resistance been repaired?	Go to Step 25	—

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Fig. 36: DTC B1034 - Arming Sensor Ignition Feed Open (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1034 - ARMING SENSOR IGNITION FEED OPEN (3 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
24	1. Repair the high resistance in CKT 1400l 2. Has the high resistance been repaired?	Go to Step 25	—
25	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 26	—
26	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check	—

96A14373 Courtesy of General Motors Corp.

Fig. 37: DTC B1034 - Arming Sensor Ignition Feed Open (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1035 - DISCRIMINATING SENSOR OPEN OR MISSING

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During normal non-deployment operation a small amount of current flows through driver deployment loop. Diagnostic resistors within arming sensor and discriminating sensors, along with resistance of air bag module, cause voltage drops within deployment loop. DERM monitors voltage at DRIVER-SIDE LOW terminal No. B8 to detect shorts or opens within deployment loop. When measured voltage is within a specified percentage of DRIVER 36 VLR power supply for 500 milliseconds, DTC B1035 is set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified percentage of DRIVER 36 VLR power supply voltage for 500 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is above or below percentage of DRIVER 36 VLR power supply voltage which sets DTC B1035.

Diagnostic Aids

An intermittent condition is likely to be an improper connection at any of the discriminating sensor terminals, an open in either ground feed to discriminating sensors, an open discriminating sensor interconnect circuit, increased resistance of either discriminating sensor or decreased resistance of arming sensor.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
7) This test checks for increased resistance of left forward discriminating sensor.
8) This test checks for open in ground feed to left forward discriminating sensor.
11) This test locates open in ground feed to left forward discriminating sensor.
19) This test checks for increased resistance of right forward discriminating sensor.
21) This test checks for open in ground feed to right forward discriminating sensor.
24) This test locates open in ground feed to right forward discriminating sensor.
27) This test checks for open in discriminating sensor interconnect circuit.
29) This test checks arming sensor loop resistance.

DTC B1035 - DISCRIMINATING SENSOR OPEN OR MISSING (1 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Disconnect the yellow 2-way connector at the base of the steering column. 2. Disconnect the LH Forward Discriminating Sensor. 3. Check for proper connection to the LH Forward Discriminating Sensor at terminals "A", "B", and "C". 4. Is the LH Forward Discriminating Sensor electrical harness connector damaged or corroded?	Go to Step 3	Go to Step 5
3	1. Repair LH forward Discriminating Sensor electrical harness connector. 2. Has the connector been repaired.	Go to Step 4	—
4	1. Check for proper connection to the LH Forward Discriminating Sensor. 2. Are the LH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 6	Go to Step 31
5	1. Check for proper connection to the LH Forward Discriminating Sensor. 2. Are the LH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 6	Go to Step 7
6	1. Replace the LH Forward Discriminating Sensor. 2. Has the sensor been replaced?	Go to Step 31	—
7	1. Measure the resistance on the LH Forward Discriminating Sensor from terminal "A" to terminal "C." 2. Is the resistance 8.54k ohms or more?	Go to Step 6	Go to Step 8
8	1. Measure the resistance from the LH Forward Discriminating Sensor electrical harness connector terminal "C" to ground. 2. Is the resistance 5.0 ohms or less?	Go to Step 14	Go to Step 9

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Courtesy of General Motors Corp.

Fig. 38: DTC B1035 - Discriminating Sensor Open Or Missing (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1035 - DISCRIMINATING SENSOR OPEN OR MISSING (2 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
9	1. Disconnect the Discriminating Sensor jumper harness electrical connector C109. 2. Check for proper connection of the Discriminating Sensor jumper harness electrical connector C109. 3. Is the Discriminating Sensor jumper harness electrical connector damaged or corroded?	Go to Step 10	Go to Step 11
10	1. Repair the Discriminating Sensor jumper harness electrical connector C109. 2. Has the connector been repaired?	Go to Step 31	—
11	1. Measure the resistance of CKT 1751 from the LH Forward Discriminating Sensor harness electrical connector terminal "C" to the Discriminating Sensor jumper harness connector C109 terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 12	Go to Step 13
12	1. Repair the open in CKT 1751 between C109 and S233. 2. Has the open CKT been repaired?	Go to Step 31	—
13	1. Repair the open in CKT 1751 between sensor connector C109. 2. Has open CKT been repaired?	Go to Step 31	—
14	1. Disconnect the RH Forward Discriminating Sensor. 2. Check for proper connection to the RH Forward Discriminating Sensor at terminals "A" and "B." 3. Is the RH Forward Discriminating Sensor electrical harness connector damaged or corroded?	Go to Step 15	Go to Step 17
15	1. Repair the RH Forward Discriminating Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 16	—
16	1. Check for proper connection to the RH Forward Discriminating Sensor. 2. Are the RH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 18	Go to Step 31
17	1. Check for proper connection to the RH Forward Discriminating Sensor. 2. Are the RH Forward Discriminating Sensor terminals damaged or corroded?	Go to Step 18	Go to Step 19
18	1. Replace the RH Forward Discriminating Sensor. 2. Has the sensor been replaced?	Go to Step 31	—
19	1. Measure the resistance on the RH Forward Discriminating Sensor electrical connector from terminal "A" to terminal "B." 2. Is the resistance 8.54k ohms or more?	Go to Step 20	Go to Step 21
20	1. Replace the RH Forward Discriminating Sensor. 2. Has the sensor been replaced?	Go to Step 31	—
21	1. Measure the resistance from the RH Forward Discriminating Sensor electrical harness connector terminal "B" to ground. 2. Is the resistance 5.0 ohms or less?	Go to Step 27	Go to Step 22

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Fig. 39: DTC B1035 - Discriminating Sensor Open Or Missing (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1035 - DISCRIMINATING SENSOR OPEN OR MISSING (3 OF 3)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
22	1. Disconnect the Discriminating Sensor jumper harness electrical connector C109. 2. Check for proper connection of the Discriminating Sensor jumper harness electrical connector C109. 3. Is the Discriminating Sensor jumper harness electrical connector C109 damaged or corroded?	Go to Step 23	Go to Step 24
23	1. Repair the Discriminating Sensor jumper harness electrical connector C109. 2. Has the connector been repaired?	Go to Step 31	—
24	1. Measure the resistance of CKT 1751 from the RH Forward Discriminating Sensor electrical harness connector terminal "B" to the Discriminating Sensor jumper harness electrical connector terminal "C." 2. Is the resistance 5.0 ohms or less?	Go to Step 25	Go to Step 26
25	1. Repair the open in CKT 1751 between C109 and S233. 2. Has the open CKT been repaired?	Go to Step 31	—
26	1. Repair the open in CKT 1751 between sensor connector C109. 2. Has the open CKT been repaired?	Go to Step 31	—
27	1. Measure the resistance of CKT 349 from the RH Forward Discriminating Sensor electrical harness connector terminal "A" to the LH Forward Discriminating Sensor electrical harness connector terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 29	Go to Step 28
28	1. Repair the open in CKT 349. 2. Has the open CKT been repaired?	Go to Step 31	—
29	1. Disconnect the Arming Sensor. 2. Measure the resistance on the Arming Sensor from terminal "C" to terminal "D." 3. Is the resistance 7.5k ohms or less?	Go to Step 30	Go to Table A
30	1. Replace the Arming Sensor. 2. Has the sensor been replaced?	Go to Step 31	—
31	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 32	—
32	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

97G05623 Courtesy of General Motors Corp.

Fig. 40: DTC B1035 - Discriminating Sensor Open Or Missing (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC B1042 - LOOP ENERGY RESERVE VOLTAGE LOW

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no

circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During Turn ON tests, performed at beginning of each ignition cycle, DERM delays charging of DRIVER 36 VLR terminal No. A4 power supply. After delay has expired the DRIVER 36 VLR power supply is allowed to charge. DERM monitors DRIVER 36 VLR power supply to ensure it has charged to a voltage above a specified value within 10 seconds after IGNITION 1 voltage is first applied to DERM. When DRIVER 36 VLR power supply does not reach specified voltage within allowed time or, once reaching voltage, falls below it for 500 milliseconds, DTC B1042 is set.

DTC Will Set

When voltage measured at DRIVER 36 VLR power supply does not exceed a specified value within 10 seconds after IGNITION 1 voltage is first applied to DERM or, once having reached the specified value, falls below specified value for 500 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER 36 VLR terminal No. A4 is above a specified value for 500 milliseconds during CONTINUOUS MONITORING.

Diagnostic Aids

An intermittent condition is likely to be caused by a short from DRIVER 36 VLR to B+ or ground or a short inside arming sensor.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

2) This test checks whether diagnostic trouble code has set falsely.

3) This test checks whether a malfunctioning arming sensor is preventing DRIVER 36 VLR from charging. This test will cause DTC B1014 (Arming Sensor Disconnected) to set.

5) This test checks whether a short to B+ is preventing DRIVER 36 VLR from charging.

6) This test locates short to B+ that is preventing DRIVER 36 VLR from charging.

9) This test checks whether a short to ground is preventing DRIVER 36 VLR from charging.

10) This test checks locates short to ground that is preventing DRIVER 36 VLR from charging.

DTC B1042 - LOOP ENERGY RESERVE VOLTAGE LOW (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIRDiagnostic System Check"
2	1. Ignition switch "ON." 2. Using the TECH 1 SIR Data List Function select "Driver 36 VLR." 3. Is the displayed voltage 32.5 volts or more?	Go to Table A	Go to Step 3
3	1. Record the displayed voltage on the repair order. 2. Ignition switch "OFF." 3. Disconnect the yellow two-way electrical connector at the base of the steering column. 4. Disconnect the Arming Sensor. 5. Ignition switch "ON." 6. Using the TECH 1 Data List Function select "Driver 36 VLR." 7. Is the displayed voltage about the same as the recorded voltage?	Go to Step 5	Go to Step 4
4	1. Ignition switch "OFF." 2. Replace the Arming Sensor. 3. Has the sensor been replaced?	Go to Step 13	—
5	1. Using the TECH 1 SIR Data List Function select "Ignition." 2. Is the displayed voltage about the same as the recorded voltage?	Go to Step 6	Go to Step 9
6	1. Ignition switch "OFF." 2. Disconnect the Arming Sensor jumper harness electrical connector C109. 3. Ignition switch "ON." 4. Using the TECH 1 SIR Data List Function select "Ignition." 5. Is the displayed voltage about the same as the recorded voltage?	Go to Step 7	Go to Step 8
7	1. Ignition switch "OFF." 2. Repair the short from CKT 236 to B+. 3. Has the short CKT been repaired?	Go to Step 13	—
8	1. Ignition switch "OFF." 2. Repair the short from CKT 236 to B+. 3. Has the short CKT been repaired?	Go to Step 13	—

97I05624 Courtesy of General Motors Corp.

Fig. 41: DTC B1042 - Loop Energy Reserve Voltage Low (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1042 - LOOP ENERGY RESERVE VOLTAGE LOW (2 OF2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
9	1. Ignition switch "OFF." 2. Is the recorded voltage on the repair order 1.0 volt or less?	Go to Step 10	Go to Table A
10	1. Disconnect the Arming Sensor jumper harness electrical connector C109. 2. Ignition switch "ON." 3. Using the TECH 1 SIR Data List Function select "Driver 36 VLR." 4. Does the scan tool display 1.0 volt or less?	Go to Step 11	Go to Step 12
11	1. Repair the short from CKT 236 to ground. 2. Has the short CKT been repaired?	Go to Step 13	—
12	1. Repair the short from CKT 236 to ground. 2. Has the short CKT been repaired?	Go to Step 13	—
13	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 14	—
14	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

97B05625 Courtesy of General Motors Corp.

Fig. 42: DTC B1042 - Loop Energy Reserve Voltage Low (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1043 - DRIVER SOURCE FEED LOW

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During normal non-deployment operation of SIR system, DERM monitors voltage supplied through arming sensor to high side of driver deployment loop at DRIVER SOURCE SENSE terminal No. A5. This measured voltage will have a value approximately equal; to DRIVER 36 VLR. When voltage measured at DRIVER-SIDE LOW terminal No. B8 is in its normal operating range, indicating driver deployment loop integrity has been maintained, while simultaneously the voltage measured at DRIVER SOURCE SENSE terminal No. A5 is a specified amount below DRIVER 36 VLR for 500 milliseconds, DTC B1043 will set.

DTC Will Set

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified percentage of DRIVER

36 VLR while simultaneously voltage measured at DRIVER SOURCE SENSE terminal No. A5 is a specified amount below DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified percentage of DRIVER 36 VLR while simultaneously voltage measured at DRIVER SOURCE SENSE terminal No. A5 is within a specified amount of DRIVER 36 VLR for 500 milliseconds during CONTINUOUS MONITORING.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection to DERM at terminal No. A5, a poor connection to arming sensor or arming sensor jumper harness electrical connector at terminal No. C, an open or short to ground in CKT 1400 or increased resistance of arming sensor.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.

12) This test checks for open in DRIVER SOURCE SENSE circuit.

15) This test locates open in DRIVER SOURCE SENSE circuit.

18) This test checks for a short in DRIVER SOURCE SENSE circuit to ground.

19) This test checks for a short in DRIVER SOURCE SENSE circuit to ground.

22) This test determines whether malfunction is due to increased resistance across DRIVER SOURCE SENSE resistor in arming sensor.

DTC 43 - DRIVER SOURCE FEED LOW (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the DERM. 4. Check for proper connection to the DERM terminal "A5." 5. Is the DERM electrical harness connector damaged or corroded?	Go to Step 3	Go to Step 5
3	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 4	—
4	1. Check for proper connection to the DERM at terminal "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 23
5	1. Check for proper connection to the DERM at terminal "A5." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 7
6	1. Replace the DERM. Refer to ON-VEHICLE SERVICE, DIAGNOSTIC ENERGY RESERVE MODULE (DERM). 2. Has the DERM been replaced?	Go to Step 23	—
7	1. Disconnect the Arming Sensor. 2. Check for proper connection to the Arming Sensor at terminal "C." 3. Is the Arming Sensor electrical harness connector damaged or corroded?	Go to Step 8	Go to Step 9
8	1. Repair the Arming Sensor electrical harness connector. 2. Has the connector been repaired?	Go to Step 9	—
9	1. Check for proper connection to the Arming Sensor at terminal "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 11	Go to Step 23
10	1. Check for proper connection to the Arming Sensor at terminal "C." 2. Are the Arming Sensor terminals damaged or corroded?	Go to Step 11	Go to Step 12
11	1. Replace the Arming Sensor. Refer to ON-VEHICLE SERVICE, ARMING SENSOR. 2. Has the sensor been replaced?	Go to Step 23	—

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Fig. 43: DTC B1043 - Driver Source Feed Low (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1043 - DRIVER SOURCE FEED LOW (2 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
12	1. Measure the resistance from the DERM electrical harness connector terminal "A5" to the Arming Sensor electrical harness connector terminal "C." 2. Is the resistance 5.0 ohms or less?	Go to Step 18	Go to Step 13
13	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Check for proper connection at the Arming Sensor jumper harness electrical connector C110. 3. Is the Arming Sensor jumper harness electrical connector C110 terminal "C" damaged or corroded?	Go to Step 14	Go to Step 15
14	1. Repair the Arming Sensor jumper harness electrical connector C110. 2. Has the connector been repaired?	Go to Step 23	—
15	1. Measure the resistance of CKT 1400 from the DERM electrical harness connector terminal "A5" to the Arming Sensor jumper harness electrical connector terminal "C." 2. Is the resistance 5.0 ohms or less?	Go to Step 16	Go to Step 17
16	1. Repair the open in CKT 1400 in arming sensor jumper harness. 2. Has the open CKT been repaired?	Go to Step 23	—
17	1. Repair the open in CKT 1400 in SIR wiring harness. 2. Has the open CKT been repaired?	Go to Step 23	—
18	1. Measure the resistance on the DERM electrical harness connector from terminal "A5" to terminal "A1" (ground). 2. Does J 39200 Display "OL" (infinite)?	Go to Step 22	Go to Step 19
19	1. Disconnect the Arming Sensor jumper harness electrical connector C110. 2. Measure the resistance on the DERM electrical harness connector from terminal "A5" to terminal "A1" (ground). 3. Does J 39200 Display "OL" (infinite)?	Go to Step 20	Go to Step 21
20	1. Repair the short in CKT 1400 to ground. 2. Has the short CKT been repaired?	Go to Step 23	—
21	1. Repair the short in CKT 1400 to ground. 2. Has the short CKT been repaired?	Go to Step 23	—
22	1. Measure the resistance of the Arming Sensor from terminal "C" to terminal "D." 2. Is the resistance 7.67k ohms or more?	Go to Step 11	Go to Table A
23	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 24	—
24	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Courtesy of General Motors Corp.

Fig. 44: DTC B1043 - Driver Source Feed Low (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1051 - FRONTAL CRASH DETECTED

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

Closure of arming sensor is detected when voltage measured at DRIVER-SIDE HIGH terminal No. B9 is within a specified amount of its deployment loop supply voltage. Closure of either discriminating sensor is detected when voltage measured at DRIVER-SIDE LOW terminal No. B8 is within a specified amount of ground potential. When both conditions are met simultaneously for not less than 250 microseconds, CRASH DATA is recorded and DTC B1051 is set.

DTC Will Set

When closure of arming sensor and at least one of the discriminating sensors is detected simultaneously for not less than 250 microseconds.

Action Taken

DERM turns on AIR BAG indicator, records CRASH DATA and sets a diagnostic trouble code.

DTC Will Clear

A scan tool clear codes command is received by DERM.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1. The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2. When DTC B1042 and DTC B1051 are set simultaneously, perform DTC B1042 diagnosis first.
3. If air bag module has not deployed, DTC B1051 may have set falsely.
4. If DTC B1051 has set with no signs of frontal impact, diagnostic trouble code has set falsely.
5. When frontal crash has occurred, it is necessary to perform indicated procedures to ensure SIR system is fully functional.
6. This test checks for a DERM malfunction setting diagnostic trouble code.
7. This test checks for a DERM malfunction setting diagnostic trouble code.
8. This test determines whether diagnostic trouble code was set inadvertently during diagnosis or by DERM malfunction.

DTC 51 - FRONTAL CRASH DETECTED

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Using the scan tool, request the SIR Diagnostic Trouble Code Display. 2. Is the DTC 42 current?	Go to DTC B1042	Go to Step 3
3	1. Ignition switch "OFF." 2. Has the Inflator Module deployed?	Go to Step 5	Go to Step 4
4	1. Inspect the front of the vehicle and undercarriage for signs of impact. 2. Are there signs of impact?	Go to Step 5	Go to Step 6
5	1. Replace the components and perform inspections as directed in the "REPAIRS AND INSPECTIONS REQUIRED AFTER AN ACCIDENT" in this section. 2. Have the accident repairs been completed?	Go to Step 9	—
6	1. Ignition switch "ON." 2. Using the TECH 1 SIR Data List Function select "Deploy Command." 3. Is the deploy command "Active"?	Go to Table A	Go to Step 7
7	1. Ignition switch "ON." 2. Clear the SIR Diagnostic Trouble Codes. 3. Is DTC 51 set?	Go to Table A	Go to Step 8
8	1. Ignition switch "OFF." 2. Was DTC 51 set when the "SIR Diagnostic System Check" was first performed?	Go to Table A	Go to "SIR Diagnostic System Check"
9	1. Reconnect all the SIR system components. 2. Ensure the components are properly mounted. 3. Have all the SIR system components been reconnected and properly mounted?	Go to Step 10	—
10	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

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Fig. 45: DTC B1051 - Frontal Crash Detected
Courtesy of GENERAL MOTORS CORP.

DTC B1052 - DATA AREA FULL

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When there is a frontal crash of sufficient force to activate arming sensor and at least one discriminating sensor simultaneously, DTC B1051 is set. At this time, DERM will record information regarding SIR system status and vehicle status in EEPROM. DTC B1052 will set when DERM has stored information regarding eight frontal crash events.

DTC Will Set

When DERM attempts to store frontal crash information and finds EEPROM data area full.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

DERM receives scan tool clear codes command. If, at next ignition ON after receiving clear codes command DERM detects data area is full, a history diagnostic trouble code is set. This allows AIR BAG indicator to illuminate should any additional malfunctions be detected.

DTC B1052 - DATA AREA FULL

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Replace the DERM. 2. Has the DERM been replaced?	Go to "SIR Diagnostic System Check"	—

96B14832 Courtesy of General Motors Corp.

Fig. 46: DTC B1052 - Data Area Full
Courtesy of GENERAL MOTORS CORP.

DTC B1053 - DERM DRIVER INITIATOR CIRCUITS HIGH RESISTANCE

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During INITIATOR ASSEMBLY RESISTANCE test, DERM grounds DRIVER-SIDE LOW terminal No. B8

and turns on driver current source at DRIVER-SIDE HIGH terminal No. B9. This causes a known amount of current to flow through driver initiator circuit. By monitoring difference between voltage at DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8, DERM calculates combined resistance of driver-side air bag module, SIR coil assembly, harness wiring CKTs 347 and 348 and connector terminal contact.

DTC Will Set

When voltage difference between DRIVER-SIDE HIGH terminal No. B9 and DRIVER-SIDE LOW terminal No. B8 is above a specified value and voltage at DRIVER-SIDE LOW is within a specified range. This test is run once each ignition cycle during INITIATOR ASSEMBLY RESISTANCE TEST when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING.
3) No CRANK signal is present.
4) IGNITION 1 voltage is above a specified value

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at DERM terminal No. B8 or B9, an open in CKT 347 or CKT 348. The test for this diagnostic trouble code is only run while AIR BAG indicator is performing BULB TEST. When scan tool clear codes command is issued and malfunction is still present, DTC will not reappear until next ignition cycle.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
7) This test checks whether malfunction is due to high resistance or open in DRIVER-SIDE LOW circuit.
9) This test checks whether malfunction is due to high resistance or open in DRIVER-SIDE HIGH circuit.

DTC B1053 - DERM DRIVER INITIATOR CIRCUIT HIGH RESISTANCE (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the DERM. 4. Check for proper connection to DERM at terminals "B8" and "B9." 5. Are the DERM electrical harness connector terminals damaged or corroded?	Go to Step 3	Go to Step 5
3	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 4	—
4	1. Check for proper connection to the DERM at terminals "B8" and "B9." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 11
5	1. Check for proper connection to the DERM at terminals "B8" and "B9." 2. Are the DERM terminals damaged or corroded?	Go to Step 6	Go to Step 7
6	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 11	—
7	1. Measure the resistance from the DERM electrical harness connector terminal "B8" to the yellow 2-way electrical connector at the base of the steering column terminal "B." 2. Is the resistance 5.0 ohms or less?	Go to Step 9	Go to Step 8
8	1. Repair the open or high resistance in CKT 348. 2. Has the open CKT been repaired?	Go to Step 11	—
9	1. Measure the resistance from the DERM electrical harness connector terminal "B9" to the yellow 2-way electrical connector at the base of the steering column terminal "A." 2. Is the resistance 5.0 ohms or less?	Go to Table A	Go to Step 10

96C14383 Courtesy of General Motors Corp.

Fig. 47: DTC B1053 - DERM Driver Initiator Circuits High Resistance (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1053 - DERM DRIVER INITIATOR CIRCUIT HIGH RESISTANCE (2 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
10	1. Repair the open or high resistance in CKT 347. 2. Has the open CKT been repaired?	Go to Step 11	—
11	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 12	—
12	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

97D14384 Courtesy of General Motors Corp.

Fig. 48: DTC B1053 - DERM Driver Initiator Circuits High Resistance (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1055 - DERM INCOMPATIBILITY

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When IGNITION 1 voltage is first applied to DERM it will perform Turn ON tests followed by CONTINUOUS MONITORING for one second. DERM also monitors DRIVER-SIDE LOW terminal No. B8 to ensure voltage is being applied to air bag module and monitors DRIVER SOURCE SENSE terminal No. A5 to ensure DRIVER 36 VLR is supplying voltage to deployment loop. Ground is applied at terminal No. B7 (passenger-side low for a Driver/Passenger DERM) and voltage is measured at DRIVER-SIDE LOW and at terminal No. A6 (passenger source sense for a Driver/Passenger DERM). When grounding terminal No. B7 grounds DRIVER-SIDE LOW or voltage is measured at terminal No. A6, DTC B1055 is set.

DTC Will Set

When circuit descriptions indicate a Driver/Passenger DERM has been installed in vehicle. This test is run once each ignition cycle during INITIATOR ASSEMBLY RESISTANCE TEST when:

1) No higher priority faults are detected during Turn ON.
2) No higher priority faults are detected during CONTINUOUS MONITORING for 1 second.
3) No CRANK signal present.
4) IGNITION 1 voltage is above a specified value.

Action Taken

DERM turns on AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

DTC B1055 - DERM INCOMPATIBILITY

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Replace the DERM. 2. Has the DERM been replaced?	Go to "SIR Diagnostic System Check"	—

96E14385 Courtesy of General Motors Corp.

Fig. 49: DTC B1055 - DERM Incompatibility
Courtesy of GENERAL MOTORS CORP.

DTC B1061 - SIR INDICATOR CIRCUIT FAILURE

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is first turned ON, battery voltage is applied to AIR BAG indicator and to IGNITION 1 input terminal Nos. A9 and A10. DERM responds by flashing AIR BAG indicator 7 times alternating between primary and redundant lamp drivers. DERM monitors primary lamp driver output by comparing output state at AIR BAG indicator terminal No. B1 to microprocessor commanded state. When IGNITION 1 is above a specified value and output state does not match commanded state of primary lamp driver for 400 milliseconds, DTC B1061 is set.

DTC Will Set

When IGNITION 1 voltage is above a specified value and output state at AIR BAG indicator terminal No. B1 does not match commanded state of primary lamp driver for 400 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM attempts to turn on AIR BAG indicator using redundant lamp driver and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

See TABLE B and TABLE C to diagnose warning lamp circuit malfunctions.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1. The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
2. When DERM is configured for a serial data controlled warning lamp (smart cluster), DTC B1061 will set. Clearing SIR diagnostic trouble codes will reset DERM allowing lamp driver in DERM to control AIR BAG indicator.

DTC B1061 - SIR INDICATOR CIRCUIT FAILURE

MALFUNCTIONS WITHIN THE "AIR BAG" WARNING LAMP CIRCUITRY WILL SET THIS DIAGNOSTIC TROUBLE CODE. THESE MALFUNCTIONS ARE ADDRESSED IN THE "SIR DIAGNOSTIC SYSTEM CHECK" VIA TABLE B AND TABLE C. FAILURE TO PROPERLY PERFORM THE "SIR DIAGNOSTIC SYSTEM CHECK" MAY RESULT IN MISDIAGNOSIS OF A MALFUNCTIONING DERM.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "ON." 2. Clear the SIR Diagnostic Trouble Codes. 3. Is DTC B1061 set?	Go to Table A	Go to "SIR Diagnostic System Check"

96F14386 Courtesy of General Motors Corp.

Fig. 50: DTC B1061 - SIR Indicator Circuit Failure
Courtesy of GENERAL MOTORS CORP.

DTC B1062 - REDUNDANT SIR INDICATOR CIRCUIT FAILURE

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

When ignition switch is first turned ON, battery voltage is applied to AIR BAG indicator and to IGNITION 1 input terminal Nos. A9 and A10. DERM responds by flashing AIR BAG indicator 7 times alternating between primary and redundant lamp drivers. DERM monitors redundant lamp driver output by comparing output state at AIR BAG indicator terminal No. B1 to microprocessor commanded state. When IGNITION 1 is above a specified value and output state does not match commanded state of primary lamp driver for 400 milliseconds, DTC B1062 is set.

DTC Will Set

When IGNITION 1 voltage is above a specified value and output state at AIR BAG indicator terminal No. B1 does not match commanded state of redundant lamp driver for 400 milliseconds during CONTINUOUS MONITORING.

Action Taken

DERM attempts to turn on AIR BAG indicator using primary lamp driver and sets a diagnostic trouble code.

DTC Will Clear

When ignition switch is turned OFF.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection to DERM at terminal Nos. A2 or B2, an open in CKT 1851 or an open in CKT 39.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

1) The **SIR DIAGNOSTIC SYSTEM CHECK** must be starting point for all diagnostics.
8) This test checks for an open in REDUNDANT INDICATOR ground circuit.
10) This test checks for an open in REDUNDANT INDICATOR IGNITION 1 circuit.
13) This test locates open in REDUNDANT INDICATOR IGNITION 1 circuit.

DTC 62 - REDUNDANT SIR INDICATOR CIRCUIT FAILURE (1 OF 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Is DTC 61 also set?	Go to DTC B1061	Go to Step 3
3	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column. 3. Disconnect the DERM. 4. Check for proper connection to the DERM at terminals "A2" and "B2." 5. Are the DERM electrical harness connector terminals damaged or corroded?	Go to Step 4	Go to Step 6
4	1. Repair the DERM electrical harness connector. 2. Has the connector been repaired?	Go to Step 5	—
5	1. Check for proper connection to the DERM at terminals "A2" and "B2." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 16

96G14387

Fig. 51: DTC B1062 - Redundant SIR Indicator Circuit Failure (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1062 - REDUNDANT SIR INDICATOR CIRCUIT FAILURE (2 0F 2)

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
6	1. Check for proper connection to the DERM at terminals "A2" and "B2." 2. Are the DERM terminals damaged or corroded?	Go to Step 7	Go to Step 8
7	1. Replace the DERM. 2. Has the DERM been replaced?	Go to Step 16	—
8	1. Measure the resistance on the DERM electrical harness connector from terminal "A2" (ground) to terminal "A12" (ground). 2. Is the resistance 5.0 ohms or less?	Go to Step 10	Go to Step 9
9	1. Repair the open in CKT 1851. 2. Has the open CKT been repaired?	Go to Step 16	—
10	1. Ignition switch "ON." 2. Measure the voltage on the DERM electrical harness connector from terminal "B2" to terminal "A12" (ground). 3. Is the voltage 1 volt or less?	Go to Step 11	Go to Table A
11	1. Disconnect connector C203. 2. Check for proper connection at terminal "G3." 3. Is connector C203 damaged or corroded?	Go to Step 12	Go to Step 13
12	1. Repair connector C203. 2. Has the connector been repaired?	Go to Step 16	—
13	1. Ignition switch "ON." 2. Measure the voltage on the fuse side of connector (C200) terminal "G3." 3. Is the voltage 1 volt or less?	Go to Step 14	Go to Step 15
14	1. Ignition switch "OFF." 2. Repair the open in CKT 39. 3. Has the open CKT been repaired?	Go to Step 16	—
15	1. Ignition switch "OFF." 2. Repair the open in CKT 39 between the DERM and connector C203 terminal "G3." 3. Has the open CKT been repaired?	Go to Step 16	—
16	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 17	—
17	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

97F05627 Courtesy of General Motors Corp.

Fig. 52: DTC B1062 - Redundant SIR Indicator Circuit Failure (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC B1071 AND/OR 75 - INTERNAL DERM FAULT

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no circumstances should battery powered test equipment or test light be

used. Carefully follow all instructions.

Description

DTC B1071 and/or DTC B1075 is an indication of an internal DERM malfunction and will set if any of the following conditions are detected:

1) DERM energy reserve voltage discharge time failure for 3 consecutive ignition cycles.
2) DERM unable to read from or write to EEPROM.
3) DRIVER 36 VLR power supply voltage is above a specified value for 500 milliseconds.
4) DERM calculated number for vehicle in which it is installed does not match value stored in EEPROM.

DTC Will Set

DTC will set when any of the indicated malfunctions are detected by the DERM.

Action Taken

DERM turns ON AIR BAG indicator and sets a diagnostic trouble code.

DTC Will Clear

The indicated malfunctions are not detected by DERM.

DTC B1071/75 - INTERNAL DERM FAULT

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Replace the DERM. 2. Has the DERM been replaced?	Go to "SIR Diagnostic System Check"	—

96I14389 Courtesy of General Motors Corp.

Fig. 53: DTC B1071 And/Or 75 - Internal DERM Fault
Courtesy of GENERAL MOTORS CORP.

DTC B1083 - DRIVER RESERVE DIODE SHORTED

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tables. Under no

circumstances should battery powered test equipment or test light be used. Carefully follow all instructions.

Description

During Turn ON tests, performed at beginning of each ignition cycle, DERM delays charging of DRIVER 36 VLR power supply. While delay is active, DERM measures voltage at DRIVER 36 VLR terminal No. A4 and DRIVER SOURCE SENSE terminal No. A5. When driver reserve diode is shorted, IGNITION 1 voltage is measured at DRIVER 36 VLR from forward biased driver ignition diode. When voltage is measured at DRIVER 36 VLR is within a specified range of IGNITION 1 voltage for 8 consecutive Turn ON tests, history DTC B1083 is set.

DTC Will Set

When voltage measured at DRIVER 36 VLR terminal No. A4 is within a specified range of IGNITION 1 voltage for 8 consecutive turn on tests and no higher priority faults are detected. This test is run once each ignition during Turn ON test while 36 VLR delay is active.

Action Taken

DERM sets a history diagnostic trouble code.

DTC Will Clear

When voltage measured at DRIVER 36 VLR terminal No. A4 indicates that power supply is in a discharged state during Turn ON tests.

Diagnostic Aids

This diagnostic trouble code will not set as a current DTC. Follow DTC table to diagnose malfunction.

NOTE: Test numbers refer to test numbers on diagnostic table. For circuit number identification, see WIRING DIAGRAM .

2) This test determines if malfunction is due to a shorted driver reserve diode within arming sensor.

DTC B1083 - DRIVER RESERVE DIODE SHORTED

WHEN MEASUREMENTS ARE REQUESTED IN THIS TABLE, USE J 39200 DVM WITH CORRECT TERMINAL ADAPTER FROM J 35616-A. WHEN A CHECK FOR PROPER CONNECTION IS REQUESTED REFER TO "INTERMITTENTS AND POOR CONNECTIONS" IN SECTION 8A-4. WHEN A WIRE, CONNECTOR OR TERMINAL REPAIR IS REQUESTED USE J 38125-A AND REFER TO "WIRING REPAIR" IN THIS SECTION.

Step	Action	Yes	No
1	1. Was the "SIR Diagnostic System Check" performed?	Go to Step 2	Go to "SIR Diagnostic System Check"
2	1. Ignition switch "OFF." 2. Disconnect the yellow 2-way electrical connector at the base of the steering column and connect the harness side of the connector to SIR Driver/Passenger load tool J 38715-A. 3. Disconnect the DERM. 4. Ignition switch "ON." 5. Measure the voltage on the DERM electrical harness connector from terminal "A4" to terminal "A12" (ground). 6. Is the voltage 1 volt or less?	Go to Table A	Go to Step 3
3	1. Ignition switch "OFF." 2. Disconnect J 38715-A. 3. Replace the Arming Sensor. 4. Has the sensor been replaced?	Go to Step 4	—
4	1. Reconnect all the SIR components. 2. Ensure the components are properly mounted. 3. Have all the SIR components been reconnected and properly mounted?	Go to Step 5	—
5	1. Clear the SIR Diagnostic Trouble Codes. 2. Have the SIR Diagnostic Trouble Codes been cleared?	Go to "SIR Diagnostic System Check"	—

96B14390 Courtesy of General Motors Corp.

Fig. 54: DTC B1083 - Driver Reserve Diode Shorted
Courtesy of GENERAL MOTORS CORP.

DESCRIPTION & OPERATION

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all WARNINGS and SERVICE PRECAUTIONS .

SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM

The Supplemental Inflatable Restraint (SIR) system is designed to protect the driver in a frontal collision. The air bag will deploy only upon frontal or near frontal impact of no more than 30 degrees off the center line of vehicle. System is not designed to deploy in rear impacts, side impacts, or rollovers. A frontal impact of sufficient severity (comparable to a collision into a solid wall at approximately 14 MPH or more) will cause sensors in vehicle to detect this sudden deceleration. These sensors, in turn, trigger the air bag module.

DIAGNOSTIC ENERGY RESERVE MODULE (DERM)

DERM performs diagnostic monitoring of all system components, stores both current and past SIR system fault

code information, warns driver of SIR system faults by controlling AIR BAG warning light, and records SIR system status during a vehicle accident. In addition, DERM maintains a 36-Volt Loop Reserve (36VLR) energy supply to provide sufficient deployment energy for about 2 minutes if vehicle system voltage is low or is lost in an accident.

A 24-pin connector connects DERM to SIR harness. Harness connector uses terminals and shorting bar in terminal contact area. DERM connector also has a shorting bar that connects AIR BAG warning input to ground when the DERM connector is disconnected. With DERM disconnected, AIR BAG warning light remains on when ignition switch is in RUN, BULB TEST, or START positions. DERM is located under or behind instrument panel.

AIR BAG WARNING LIGHT

When ignition switch is in RUN, BULB TEST, or START positions, battery voltage is applied to AIR BAG warning light. DERM illuminates this light by providing a ground to a lamp driver. DERM transmits a request to turn on AIR BAG warning light via the serial data line. When ignition is first turned on, AIR BAG warning light verifies light and DERM operation by flashing 7 times. Light is also used to warn driver of SIR electrical system faults which could potentially affect SIR system operation. AIR BAG warning light is the key to driver notification of SIR system faults.

In addition, the light provides diagnostic information by flashing Diagnostic Trouble Codes (DTCs) when the flash code diagnostic mode is entered on models without on-board diagnosis. AIR BAG warning light notifies driver of SIR system faults.

ARMING SENSOR

Arming sensor is a protective switch located in power feed side (positive side) of deployment loop. It is calibrated to close at low-level velocity changes (lower than discriminating sensors). This assures that the air bag module is connected directly to 36VLR output of DERM or ignition voltage when either of the discriminating sensors close.

Arming sensor consists of a sensing element, normally open switch contacts, a diagnostic resistor, and 2 diodes. Sensing element closes switch contacts when velocity of vehicle changes at a rate indicating potential need for deployment. A diagnostic resistor is connected in parallel with normally open switch contacts and allows for a small amount of current flow through deployment loop during normal undeployed conditions. This small current flow results in voltage drops across each component within loop.

DERM monitors these voltage drops to detect circuit or component faults. The 2 diodes provide isolation between 36VLR output of DERM and ignition voltage.

DISCRIMINATING SENSORS

SIR systems have 2 discriminating sensors: the left forward discriminating sensor and the right forward discriminating sensor. Discriminating sensors are wired in parallel on the ground side of deployment loop. These sensors are calibrated to close when deceleration velocity changes are severe enough to warrant deployment.

Sensors consist of a sensing element, normally open switch contacts, and a diagnostic resistor. Sensing element closes the normally open switch contacts when vehicle velocity changes are severe enough to warrant deployment.

A diagnostic resistor is connected in parallel with the normally open switch contacts within each of the sensors. These parallel resistors supply the ground path for current passing through the deployment loop during normal undeployed conditions. This small current flow results in a voltage drop across each component within loop. DERM monitors these voltage drops to detect circuit or component faults.

SIR COIL ASSEMBLY

SIR coil assembly consists of 2 current-carrying coils. It is installed in steering column and allows rotation of steering wheel while maintaining continuous (directly wired) contact of deployment loop through steering wheel air bag module. Slip rings are not used in SIR system to transmit current from column to steering wheel.

Terminals and a shorting bar are used on coil assembly lower steering column **Yellow** 2-way connector. Shorting bar shorts the circuits to main coil and steering wheel air bag module when lower steering column connector is disconnected. This shorts the circuit to the air bag module, preventing unwanted deployment of the air bags when servicing the steering column or other SIR components.

AIR BAG MODULE

When the vehicle is in an accident of sufficient force to simultaneously close the arming sensor and at least one discriminating sensor, nitrogen gas inflates the cloth bag packed inside the steering wheel hub. As air bag is contacted by driver or passenger, the gas is vented through openings in the bag, which deflates almost as soon as it is completely deployed.

There is a shorting bar on the air bag module side of the upper steering column connector which connects the SIR coil to the air bag module. The shorting bar shorts the air bag module circuit when the upper steering column connector is disconnected. The circuit to the air bag module is shorted in this way to help prevent unwanted deployment of the air bag when servicing the air bag module or steering column.

SERVICE PRECAUTIONS

The following precautions should be observed when working with SIR system:

- The DERM maintains sufficient voltage to cause air bag deployment for up to 2 minutes after ignition is turned OFF, battery is disconnected, or fuse powering DERM is removed. In order to begin servicing immediately, air bag modules must be removed from the deployment loop. See **DISABLING SYSTEM** .
- After repairs, ensure AIR BAG warning light is working properly and no system faults are indicated. See **SYSTEM OPERATION CHECK** .
- Always wear safety glasses when servicing or handling an air bag module.
- Air bag module must be stored in its original special container until used for service. It must be stored in a clean, dry place, away from sources of extreme heat, sparks, or high electrical energy.
- Air bag modules or DERMs should not be subjected to temperatures above 150°F (65°C).
- Air bag modules or DERMs should not be used if they have been dropped from a height of 3 ft (0.9 m) or

greater.

- When placing a live air bag module on a bench or other surface, always make certain that the trim cover (finished side) is up and away from surface. This will reduce motion of module if accidentally deployed.
- After deployment, air bag surface may contain deposits of sodium hydroxide, which can irritate skin. Always wear safety glasses, rubber gloves and long-sleeved shirt during clean-up, and wash hands using mild soap and water. Follow correct disposal procedures. See **DISPOSAL PROCEDURES** .
- At no time should any electrical source be allowed near inflator on back of air bag module.
- **DO NOT** apply power to SIR system unless all components are connected or a diagnostic chart requests it, as this will set a diagnostic trouble code.
- When carrying a live air bag module, trim cover should be pointed away from your body to minimize injury in case of accidental deployment.
- **DO NOT** attempt to service DERM, front end discriminating sensor, SIR coil assembly, or air bag modules. If defective, these parts must be replaced.
- **DO NOT** probe a wire through insulator; this will damage it and eventually cause failure due to corrosion.
- When performing electrical tests, prevent accidental shorting of terminals. Such mistakes can damage fuses or components and may cause a second fault code to set, making diagnosis of original problem more difficult.
- When using diagnostic charts to diagnose SIR system, under no circumstances should a volt/ohmmeter, test light or any type of electrical equipment not specified by manufacturer be used. See **SPECIAL TOOLS** .
- If SIR system is not fully functional for any reason, vehicle should not be driven until system is repaired. **DO NOT** remove bulbs, modules, sensors or other components or in any way disable system from operating normally. If SIR system is not functional, park vehicle until repairs can be made.

SPECIAL TOOLS

To avoid deployment when working on SIR system, DO NOT use electrical test equipment such as test lights, battery or A/C-powered volt/ohmmeter, or any type of electrical equipment other than those specified by manufacturer. See SIR RECOMMENDED TOOLS table.

SIR RECOMMENDED TOOLS

Tool Name	Tool Number
Connector Test Adapter Kit	J-35616
Digital Volt/Ohmmeter	J-39200
Air Bag Module & Steering Column Replacement Load	J-38715-A
Wire Repair Kit	J-38125-A
Scan Tool	Tech 2

DISABLING & ACTIVATING SIR SYSTEM

WARNING: Wait about 2 minutes after disabling air bag system. The SDM maintains system voltage for about 2 minutes after battery is disconnected.

Servicing air bag system before 2 minutes may cause accidental air bag deployment, possibly causing personal injury.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. Record customer radio stations, as memory will be lost. Code equipped radios may also lock. Obtain code from customer. See COMPUTER RELEARN PROCEDURES in GENERAL INFORMATION before disconnecting battery.

DISABLING SYSTEM

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition switch to LOCK position.
2. Remove AIR BAG fuse. Remove I/P sound insulator. Remove Connector Position Assurance (CPA) clip and disconnect **Yellow** 2-way SIR connector at base of steering column.
3. Wait 2 minutes before beginning service. All connectors in SIR system use CPA clips to ensure connector retention. Even if system is disconnected, use caution when working near air bags.

ACTIVATING SYSTEM

Connect **Yellow** 2-way SIR connector at base of steering column. Install CPA clips, fuse and light I/P sound insulator. Turn ignition switch to RUN position and ensure AIR BAG warning light flashes 7 times and then goes out.

POST-COLLISION INSPECTION

When a vehicle has been involved in a collision, certain components of the passive restraint system must be inspected or replaced. See PASSIVE RESTRAINT SYSTEM INSPECTION article in the GENERAL INFORMATION section for post-collision inspection information.

ADJUSTMENTS

CENTERING COIL ASSEMBLY

While holding coil assembly housing, depress spring lock and rotate hub in direction of arrow until it stops. Coil assembly should now be wound up snug against center hub. Rotate coil assembly hub in opposite direction approximately 2 1/2 turns. Release spring lock between locking tabs in front of arrow. See **Fig. 55** .

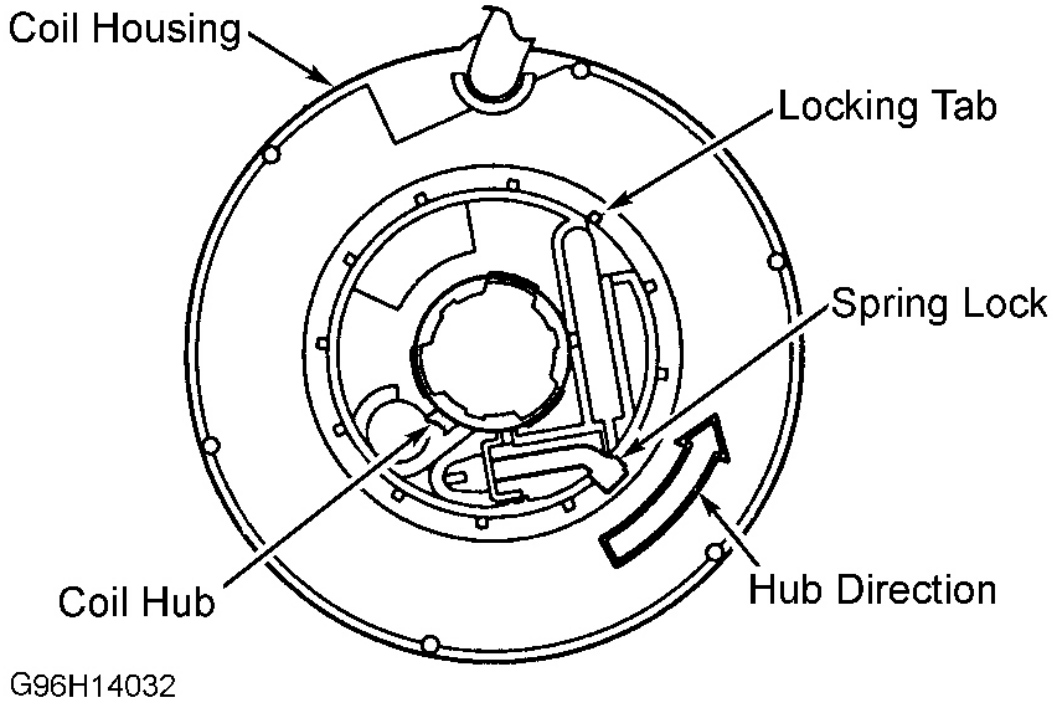


Fig. 55: Centering SIR Coil Assembly
Courtesy of GENERAL MOTORS CORP.

DISPOSAL PROCEDURES

WARNING: Undeployed air bag module contains substances that can cause illness or injury if handled improperly. Disposing of an air bag module without first deploying it may violate federal, state and/or local laws. This also applies to vehicles being scrapped. After deployment, air bag module can be disposed of as would any other part. Wear safety glasses and gloves when handling an air bag module.

AIR BAG DEPLOYMENT

NOTE: If vehicle is to be scrapped, perform on-vehicle air bag deployment procedure.

WARNING: During deployment, air bag module can become hot enough to burn you. Wait 30 minutes after deployment before touching the assembly.

On-Vehicle

1. Before proceeding, read service precautions. See **SERVICE PRECAUTIONS** . Ensure air bag assemblies are securely mounted to steering wheel. Turn ignition to LOCK position, remove key and put on safety glasses. Remove all loose objects from front seats. Disconnect air bag module **Yellow** 2-way connector located at base of steering column.
2. Cut air bag module **Yellow** 2-way harness connector from instrument panel harness. Leave at least 6 inches (16 cm) of wire at connector. Strip .5 inch (13 mm) of insulation from each wire lead of connector. Cut 2 15 foot (4.6 meters) deployment wires from 18 gauge (.8 mm) or thicker multi strand wire. These wires will be used to fabricate deployment harness. Strip .5 inch (13 mm) of insulation from both ends of the wires.
3. Twist together one connector wire lead to one deployment wire. The connection should be mechanically secure. Bend twisted connection flat and wrap tightly with electrical tape to insulate and secure. Twist together, bend and tape remaining connector wire to the remaining deployment wire. Connect deployment harness to air bag module, **Yellow** 2-way connector at base of steering column. Route deployment harness out of driver-side of vehicle.

WARNING: Never connect deployment wires to any power source before connecting to air bag module leads. The air bag will immediately deploy when a power source is connected to it.

4. Verify that inside of vehicle and area surrounding vehicle area are clear of all people and loose or flammable objects.
5. Stretch driver and passenger deployment harness to full length. Completely cover windshield area and front door window openings with a drop cloth to reduce possibility of injury due to fragmentation of glass or other objects.
6. Notify all people in the area that you are going to deploy the air bags and that the deployment will be accompanied by a substantial noise.
7. Separate the two ends of the deployment harness wires. Connect driver-side deployment wires to a 12 volt minimum, 2 amps minimum power source. A vehicle battery is suggested. The driver-side air bag will immediately deploy.

WARNING: Observe safety precautions when handling a deployed air bag module. After deployment, metal surfaces of assembly will be very hot. Allow air bag module to cool before handling any metal portion of it. Do not place hot deployed assembly near any flammable objects.

8. Short deployment harness wires by twisting together one end from each. Carefully remove drop cloth from vehicle and clean off any fragments or discard drop cloth entirely.
9. In the unlikely event that either or both of the air bag assemblies did not deploy after following these procedures, remove undeployed air bag module from vehicle. See **AIR BAG MODULE** under REMOVAL & INSTALLATION. Temporarily store air bag module with air bag opening facing up, away from surface upon which it rest.

NOTE: Before proceeding, read service precautions. See SERVICE PRECAUTIONS .

The following procedure requires the use of the SRS Deployment Harness (J 38826) with the appropriate pigtail adapter. Do not attempt procedure without the SRS Deployment Harness (J 38826) and adapter.

WARNING: Never connect deployment wires to any power source before connecting to air bag module leads. The air bag will immediately deploy when a power source is connected to it.

Off-Vehicle

1. Turn ignition to "LOCK", remove key and put on safety glasses. Using SRS Deployment Harness (J 38826), short the two SRS deployment leads by fully seating one banana plug into the other. Connect appropriate pigtail adapter to SRS deployment harness. Remove air bag module from vehicle. See **AIR BAG MODULE** under REMOVAL & INSTALLATION.
2. Place air bag module on work bench away from all loose or flammable objects with trim cover facing up. Clear a space on ground about 6 feet (183 cm) around area where air bag will be deployed. Place driver-side air bag module, with trim cover facing up, on ground in center of 6 foot area just cleared.
3. Stretch SRS Deployment Harness and pigtail adapter to its full length and place a power source near the shorted end of the SRS deployment harness. A vehicle battery is suggested. Connect air bag module to pigtail adapter. Deployment harness should remain shorted and not be connected to power source until air bag is to be deployed. The air bag module will deploy immediately when a power source is connected.

NOTE: Ensure pigtail adapter is firmly seated into driver-side air bag module connector. Failure to fully seat connectors may leave shorting bar functioning (shorted) and result in non-deployment of driver air bag module.

NOTE: Notify all people in immediate area that you are about to deploy the driver-side air bag. The deployment will make a substantial noise.

WARNING: Never connect deployment wires to any power source before connecting to air bag module leads. The air bag will immediately deploy when a power source is connected to it.

4. Separate the two banana plugs on the SRS deployment harness. Connect SRS deployment harness wires to power source to immediately deploy drive-side air bag. Disconnect SRS deployment harness from power source and short together the two deployment harness leads by fully seating one banana plug into the other.

WARNING: During deployment, air bag module can become hot enough to burn you. Wait 30 minutes after deployment before touching the assembly.

NOTE: Disconnect pigtail adapter from air bag module as soon after deployment as possible. This will prevent damage to adapter or harness due to possible

contact with hot air bag assembly canister. Be sure to inspect harness and pigtail for damage before reuse.

REMOVAL & INSTALLATION

WARNING: Failure to follow air bag service precautions may result in air bag deployment and personal injury. Refer to SERVICE PRECAUTIONS . After component replacement, perform a system operational check to ensure proper system operation. See SYSTEM OPERATION CHECK .

DERM

Removal

1. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable the air bag restraint system. Refer to **DISABLING & ACTIVATING SIR SYSTEM** .
2. Remove right sound insulator, sill plate, and cowl side trim plate. Remove CPA clip and disconnect DERM electrical connector from DERM. Remove DERM after electrical connections have been disconnected. See **Fig. 56** .

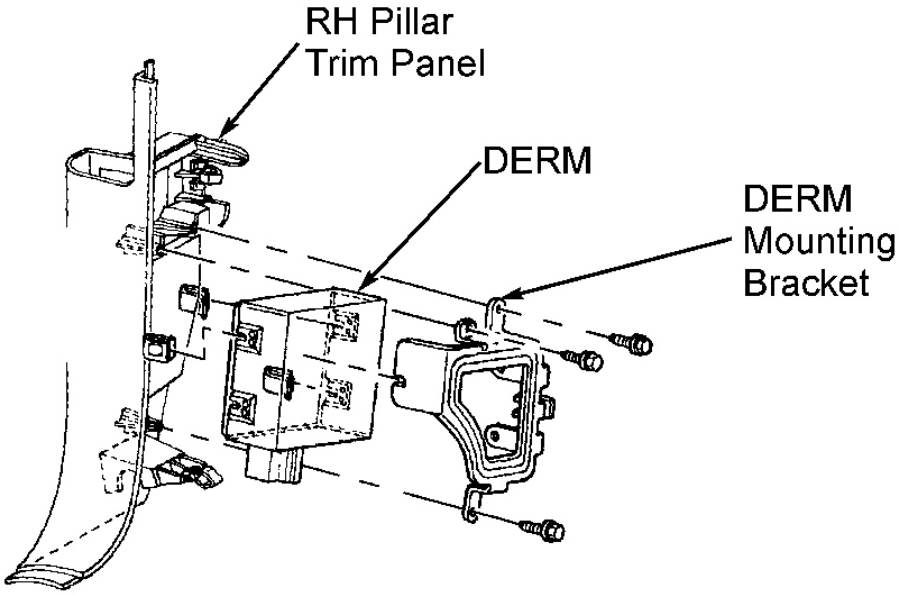


Fig. 56: Removing DERM
Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. See **Fig. 56** . Reactivate air bag system. See **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

ARMING SENSOR

Removal

1. Before proceeding, follow air bag service precautions. Refer to **SERVICE PRECAUTIONS** . Disable the air bag restraint system. See **DISABLING & ACTIVATING SIR SYSTEM** .
2. Remove sensor connector from retainer. Remove CPA clip. Disconnect sensor connector. Remove fasteners and sensor. See **Fig. 57** .

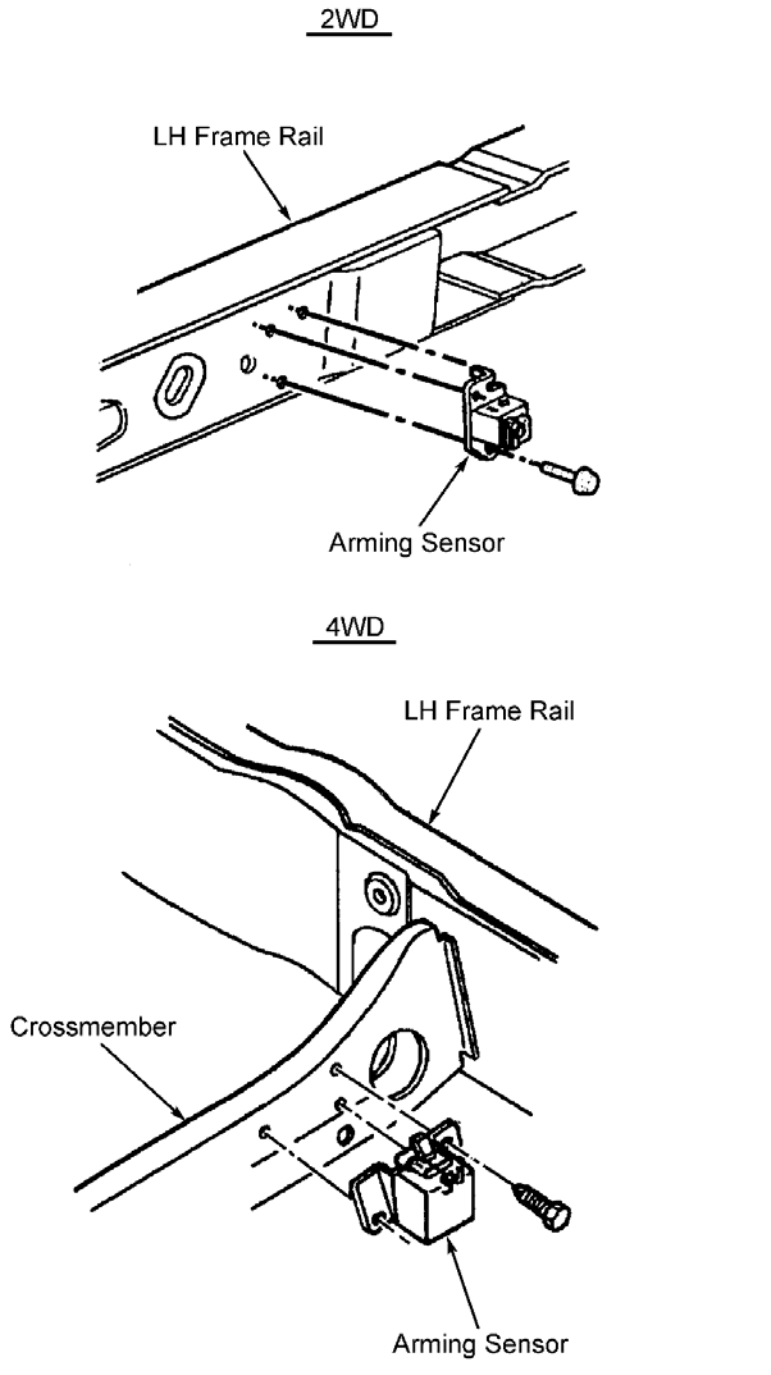


Fig. 57: Removing Arming Sensor
Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. See **Fig. 57** . Reactivate air bag system. See **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

FORWARD DISCRIMINATING SENSORS

Removal

1. Before proceeding, follow air bag service precautions. Refer to **SERVICE PRECAUTIONS** . Disable the air bag restraint system. See **DISABLING & ACTIVATING SIR SYSTEM** .
2. Drill out mounting bolts. Remove CPA clip from connector and disconnect sensor electrical connector. Remove sensor. See **Fig. 58** .

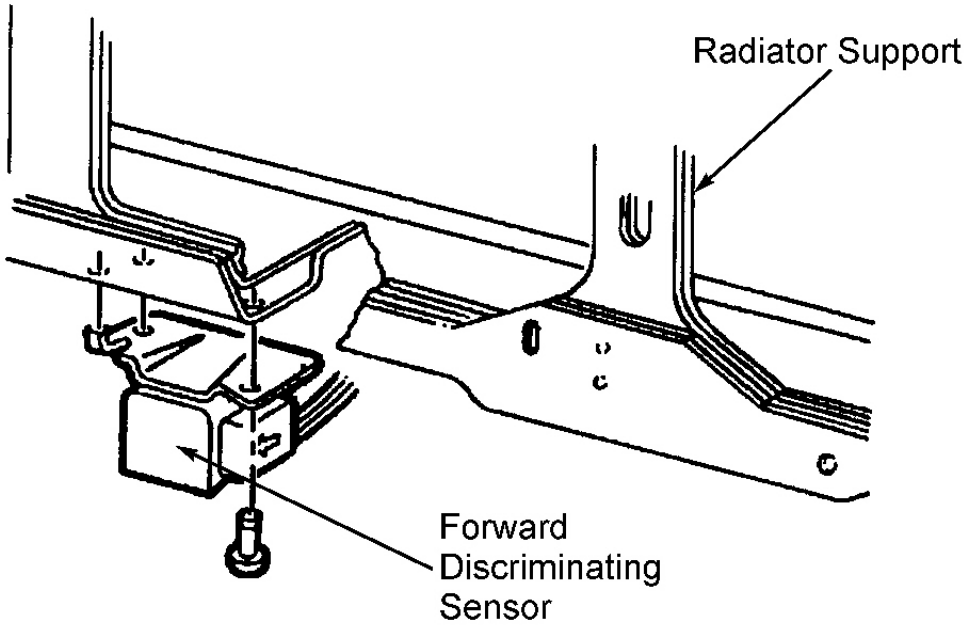


Fig. 58: Removing Forward Discriminating Sensor
Courtesy of GENERAL MOTORS CORP.

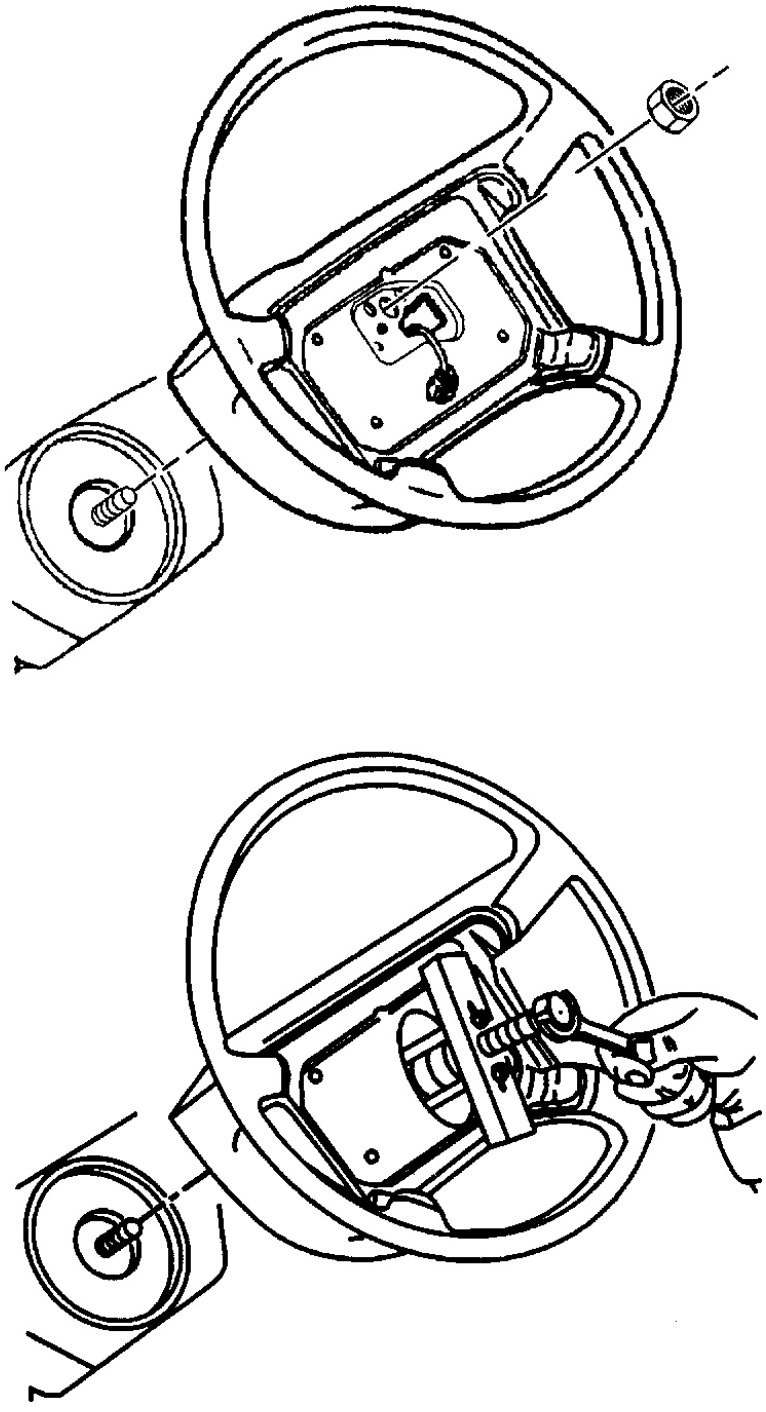
Installation

To install, reverse removal procedure. See **Fig. 58** . Ensure arrow on sensor is installed pointing forward. Reactivate air bag system. See **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light to make sure the system is functioning properly. Refer to **SYSTEM OPERATION CHECK** .

STEERING WHEEL

Removal

1. Before proceeding, follow air bag service precautions. Refer to **SERVICE PRECAUTIONS** . Disable the air bag restraint system. See **DISABLING & ACTIVATING SIR SYSTEM** .
2. Remove air bag module. See **AIR BAG MODULE** under REMOVAL & INSTALLATION. Remove steering wheel locking nut. Horn plunger contact. Using Steering Wheel Puller (J-1859-03), remove steering wheel. See **Fig. 59** . DO NOT install puller bolts too far, as damage to coil assembly can result.



96F05948

Courtesy of General Motors Corp.

Fig. 59: Removing Steering Wheel

Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. See **Fig. 59** . Tighten locking nut. See **TORQUE SPECIFICATIONS** . Reactivate air bag system. See **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light to make sure the system is functioning properly. Refer to **SYSTEM OPERATION CHECK** .

SIR COIL ASSEMBLY

Removal

1. Before proceeding, follow air bag service precautions. Refer to **SERVICE PRECAUTIONS** . Disable the air bag restraint system. See **DISABLING & ACTIVATING SIR SYSTEM** . Ensure front wheels are in straight ahead position.
2. Lower or remove steering column from vehicle. Remove lower column shroud. Lift upper shroud to gain access to lock cylinder hole. Hold key in START position. Using wrench, push on lock cylinder retaining pin. Release key to RUN position and pull steering column lock cylinder set from lock module assembly. Remove upper column shroud.
3. Remove air bag module. See **AIR BAG MODULE** . Remove steering wheel. See **STEERING WHEEL** . DO NOT install puller bolts too far, as damage to coil assembly can result. Remove retaining ring and coil assembly. See **Fig. 60** . Remove wave washer and two wire harness straps from steering column wire harness.

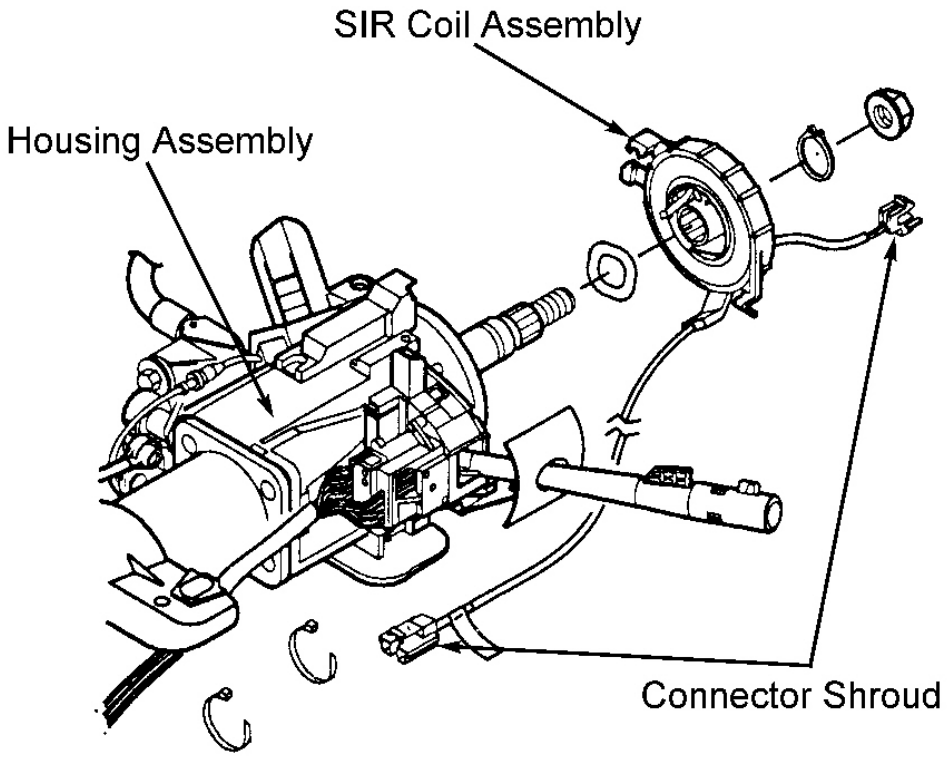


Fig. 60: Removing SIR Coil Assembly
Courtesy of GENERAL MOTORS CORP.

NOTE: New SIR coil assembly comes pre-centered. Remove and dispose centering tab when installing.

Installation

1. Ensure coil assembly hub and steering shaft are centered. Coil assembly will become uncentered if column is separated from steering gear and is allowed to rotate, or if centering spring is depressed, allowing hub to rotate while coil assembly is removed from column. To center coil assembly, see **CENTERING COIL ASSEMBLY** under ADJUSTMENTS.
2. Ensure front wheels are in straight ahead position and turn ignition to LOCK position. Install wave washer. To install coil assembly, align coil assembly with horn tower and slide onto shaft. See **Fig. 60** . Install retaining ring securely in groove on shaft. Route lower coil wire along steering column jacket assembly.
3. Install two wire straps to steering column wire harness. Move shift and multifunction lever seal to ease installation of column shrouds. Install upper column shroud and steering lock cylinder set. Install lower

column shroud. Move shift and multifunction lever seal into position.

4. Install steering wheel and air bag module. See **STEERING WHEEL** and AIR BAG MODULE. Reactivate air bag system. See procedures under **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light for proper system function. See **SYSTEM OPERATION CHECK** .

AIR BAG MODULE

Removal

1. Before proceeding, follow air bag service precautions. Refer to **SERVICE PRECAUTIONS** . Disable the air bag restraint system. See **DISABLING & ACTIVATING SIR SYSTEM** .
2. Turn steering wheel 90 degrees to access rear shroud holes to air bag module. Insert screw driver and push leaf spring to release pin. Turn steering wheel 180 degrees to access remaining rear shroud holes. Insert screw driver and push leaf spring to release pin. Remove air bag module. Disconnect SIR lead wire from clip on air bag module and steering wheel. Remove CPA clip and retainer from air bag module. See **Fig. 61** .

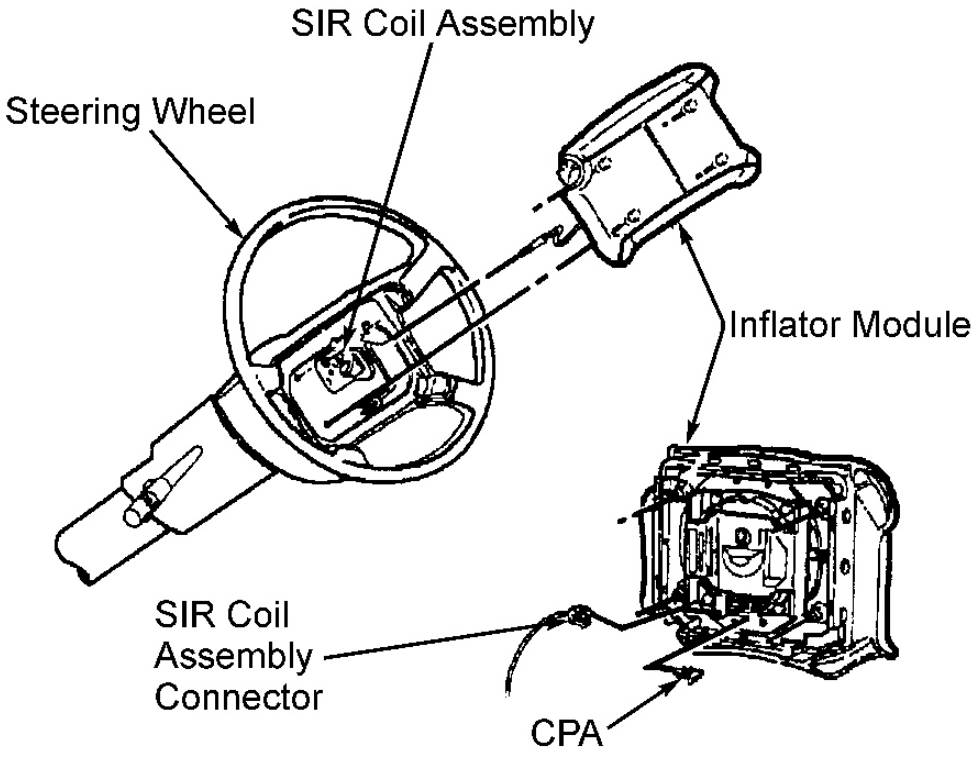


Fig. 61: Removing Driver-Side Air Bag Module
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install CPA clip and retainer to air bag module. Connect SIR lead wire to clip on steering wheel and air bag module. Install air bag module by pressing it firmly into steering wheel enough to engage and latch all four notched pins in the leaf spring. Do not pinch wires. See **Fig. 61** .
2. Reactivate air bag system. See **DISABLING & ACTIVATING SIR SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

SYSTEM OPERATION CHECK

If system is functioning normally, air bag warning light flashes 7 times when ignition switch is turned to ON position and goes out.

Four possible warning light conditions can indicate a system failure:

- Light does not illuminate at all.
- Light comes on while vehicle is driven.
- Light flashes 7 times, and remains on.
- Light does not flash but remains lit when ignition is turned on.

SIR system faults are usually due to a disconnected/loose electrical connector caused by previous service on vehicle. Always check **Yellow** SIR connector at base of steering column for loose or damaged wiring.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	**Ft. Lbs. (N.m)**
Steering Wheel Nut	30 (41)
	INCH Lbs. (N.m)
Air Bag Module Nut/Screw	
Driver-Side	27 (3)
SIR Coil Mounting Screw	30 (3.4)
Turn Signal Switch Screw	30 (3.4)
Turn Signal Switch Arm Screw	20 (2.3)

WIRING DIAGRAM

1997 Chevrolet S10 Pickup

AIR BAG RESTRAINT SYSTEM 1997 ACCESSORIES/SAFETY EQUIPMENT General Motors - Air Bag Restraint System

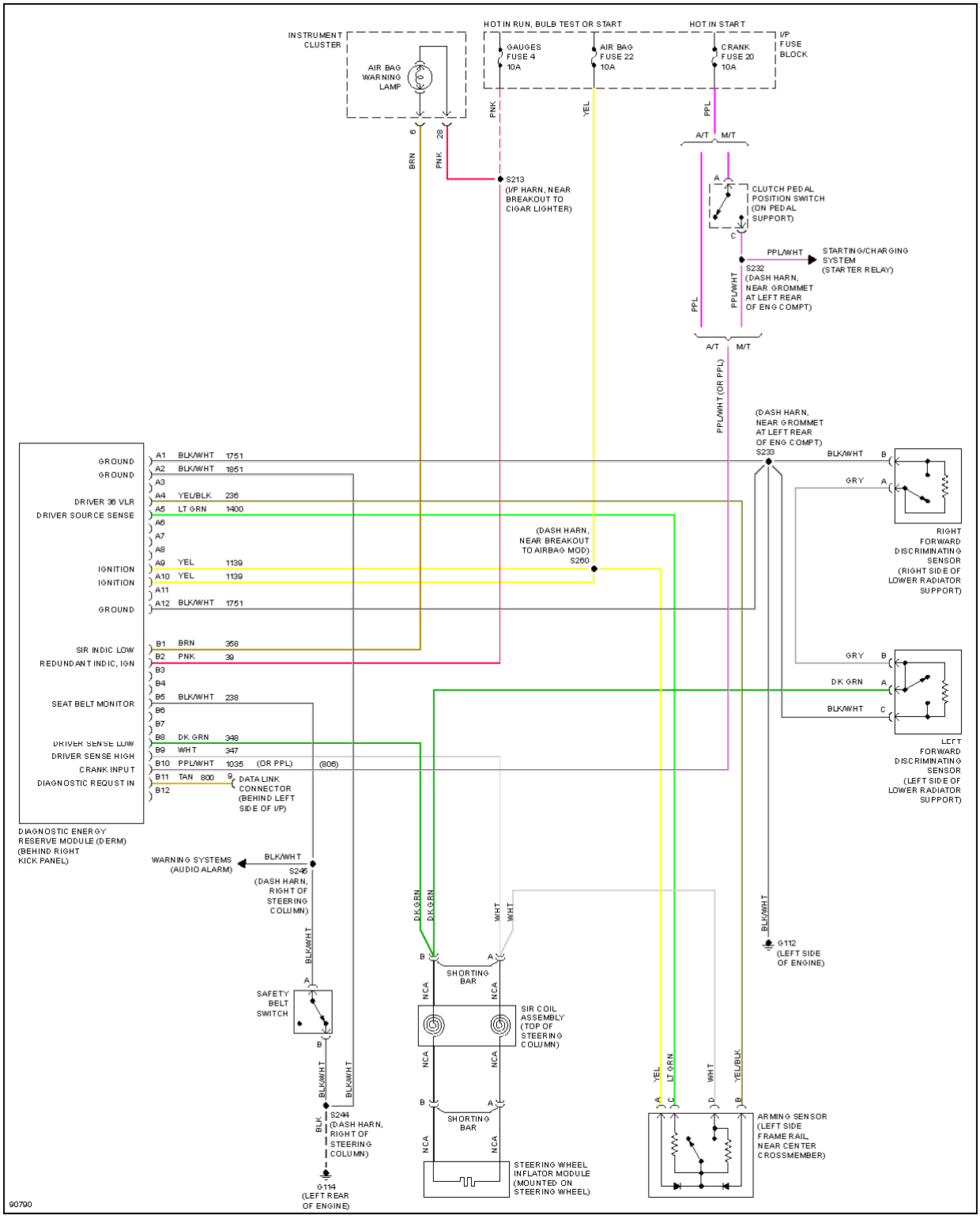


Fig. 62: SIR System Wiring Diagram